



Notebook System Level 1 Training Material

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ASUS[®]
HEART OF TECHNOLOGY



Overview

- n Chapter 1 Testing Flow Chart**
- n Chapter 2 Customer Induced Damage (CID) Criteria**
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- n Chapter 4 Visual Inspection**
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- n Chapter 7.2 Test in FreeDOS**
- n Chapter 8 Windows Testing Program**

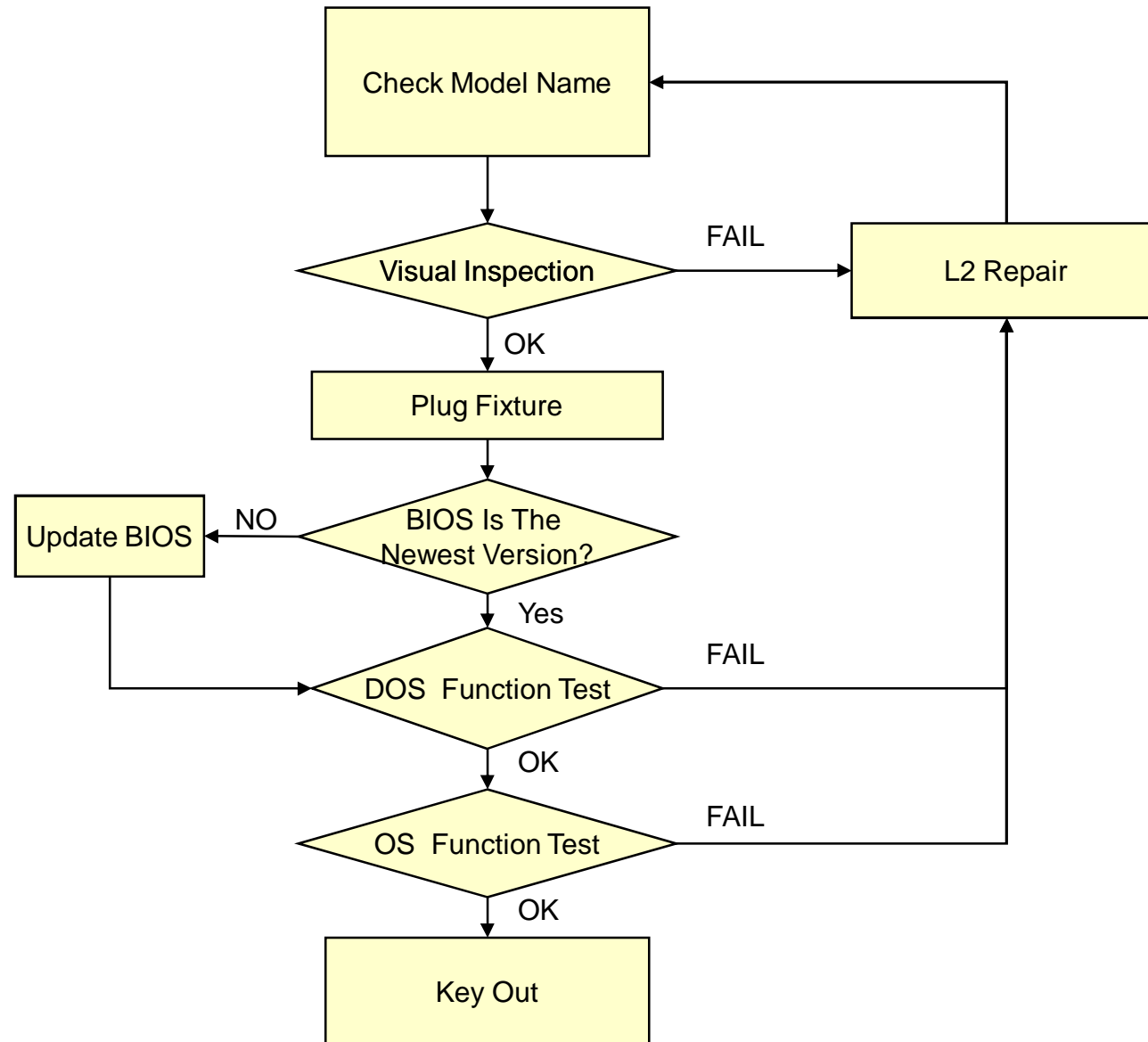


Chapter 1

Test flow chart



Test flow chart





Chapter 2

Customer Induced Damage (CID) Criteria



Content

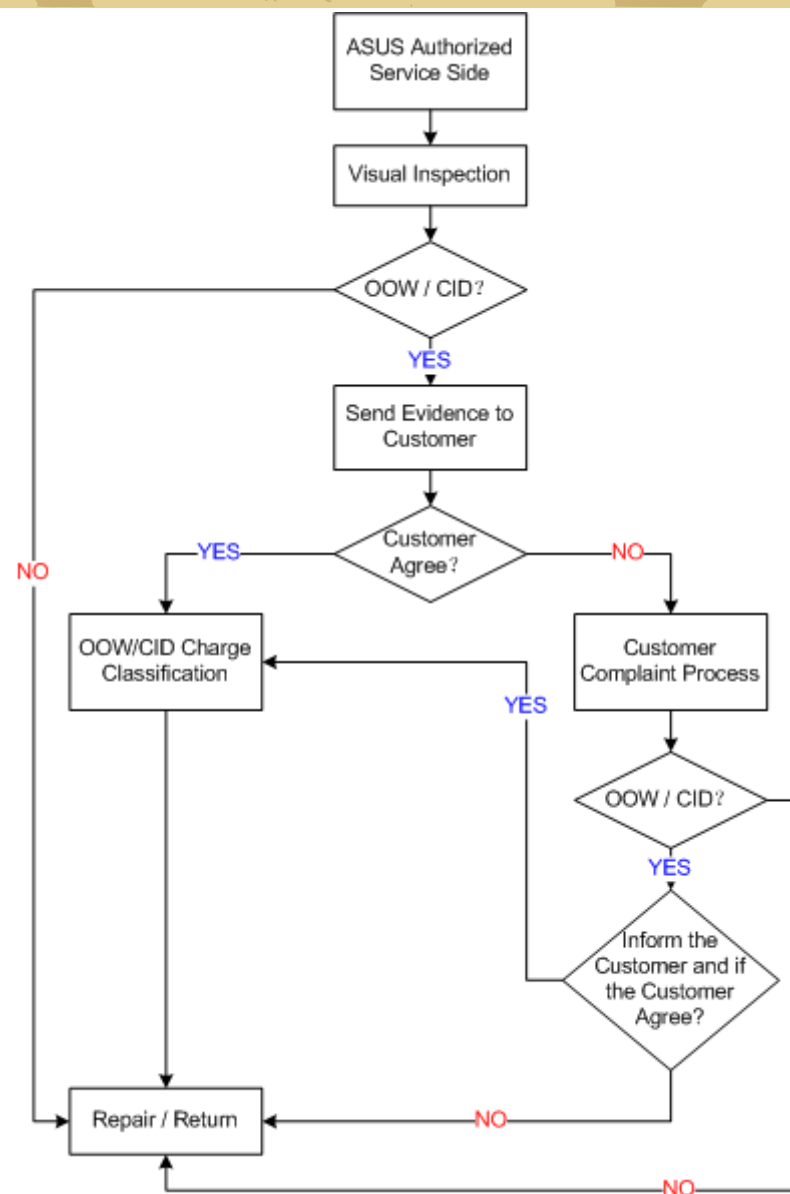
Ø CID & OOW(Out of Warranty) Service Process Flow Chart

Ø CID Outline

- Surface
- Keyboard
- Adapter
- Mouse
- ODD
- LCD
- Machine



CID&OOW Service Process Flow Chart





Surface – Painting Peel Off



1



2



3



4



5

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Painting peel off [Figure1-5]	LCD bezel or top case worn or painting peel off	Exchange or thicken the rubber	-	Free	Free
		-	Exchange related parts	Charge	Charge
	LCD cover or bottom case worn or painting peel off	-	Exchange related parts	Charge	Charge



Surface - Broken



6



7



8



9



10

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Broken [Figure 6-14]	Not caused by hit or dropped	TBD	-	-	-
	Caused by hit or dropped or customer induced	Exchange related parts	-	Charge	Charge



Surface - Broken



11



12



13



14



Keyboard



15

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keycap drop off [Figure 15]	Keycap drop off (including its bracket)	Reinstall	-	Free	Free
		-	Exchange the keyboard	Charge	Charge



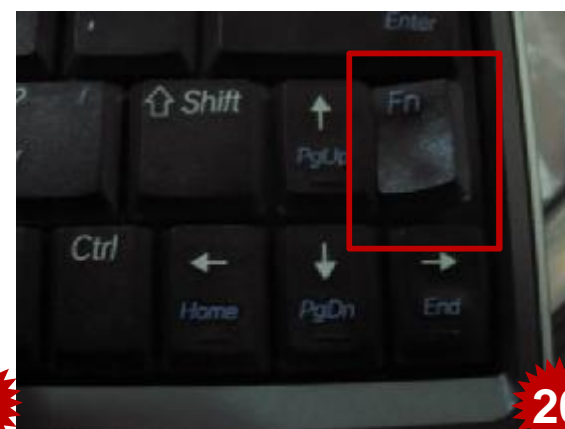
Keyboard - Oxidation



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keyboard Oxidation [Figure 16-17]	Liquid soak into the keyboard and the top case.	-	Exchange the parts which was soaked by the liquid	Charge	Charge



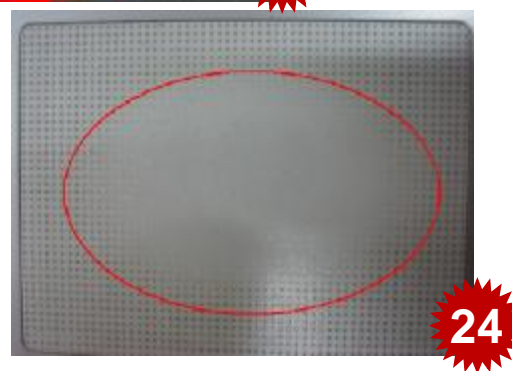
Keyboard - Broken



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
KeycapTwist [Figure 18-20]	Keycap twisted heated by the outside	-	Exchange the keyboard	Charge	Charge
	Keycap twisted by other reasons	TBD	-	-	-



Keyboard / Touch Pad Abraded



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Keyboard or Touch Pad abraded [Figure 21-24]	Keyboard or Touch Pad was polished by the abrasion.	-	Exchange the keyboard or Touch Pad	Charge	Charge
	The sign on the keyboard or Touch Pad was drop off	-	Exchange the keyboard or Touch Pad	Charge	Charge



Adapter – Surface Damaged



25



26

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter surface damaged [Figure 25-26]	Adapter surface has water mark or melted or broken.	-	Exchange the adapter	Charge	Charge



Adapter – Cable Damaged

27



28



29



30



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter Cable damaged [Figure 27-30]	Cable broken and the plastic outside abraded	-	Exchange the adapter	Charge	Charge



Adapter – Label Damaged



31

Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Adapter label damaged [Figure 31]	Label removed, scribbled or damaged seriously	-	Exchange the adapter	Charge	Charge



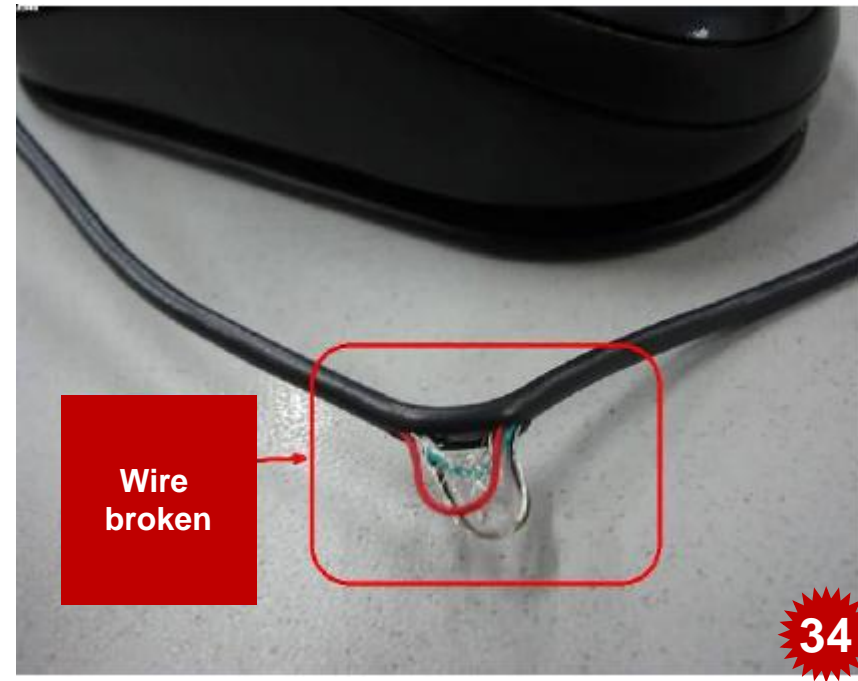
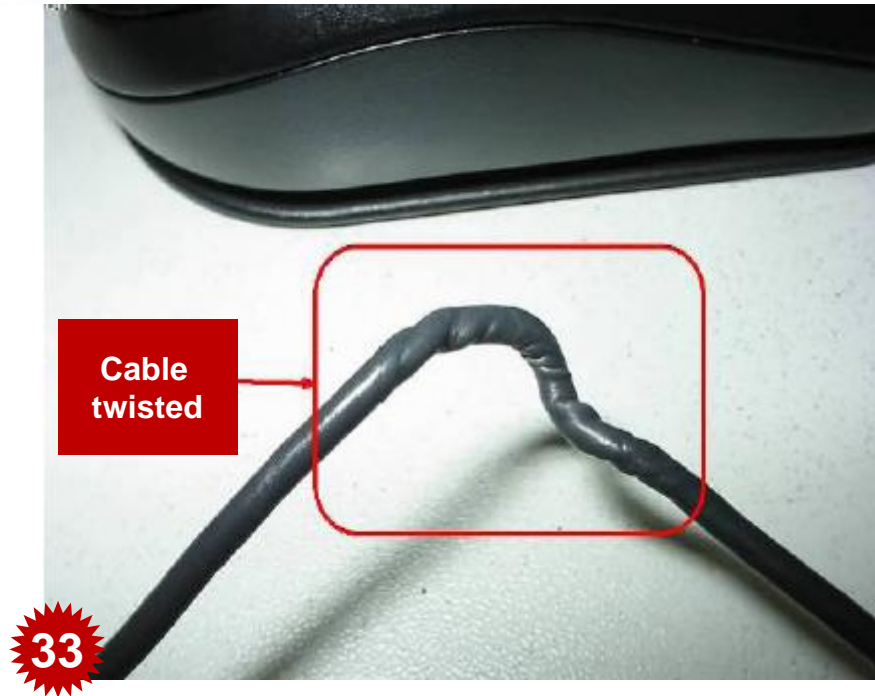
Mouse – Surface Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Surface Damaged [Figure 32]	The surface of the mouse split or damaged.	-	Exchange the mouse	Charge	Charge



Mouse – Cable damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Cable Damaged [Figure 33-34]	Cable twisted or wire broken	-	Exchange the mouse	Charge	Charge



Mouse – Label Damaged



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Label Damaged [Figure 35-36]	Label tear up by customer or disassembled after damaged	-	Exchange the mouse	Charge	Charge



ODD – Mechanical Damaged



37

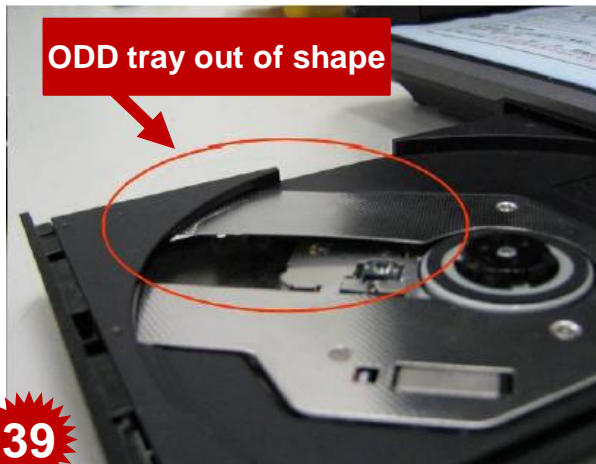
Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Mechanical Damaged [Figure 37]	The hook broken, damaged or missed so that the ODD couldn't read the disk.	-	Exchange the ODD	Charge	Charge



ODD – Mechanical Damaged



ODD bracket broken



ODD tray out of shape



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Mechanical Damaged [Figure 38-40]	Includes: ODD bracket broken, ODD tray out of shape, data cable damaged, etc.	-	Exchange the ODD	Charge	Charge



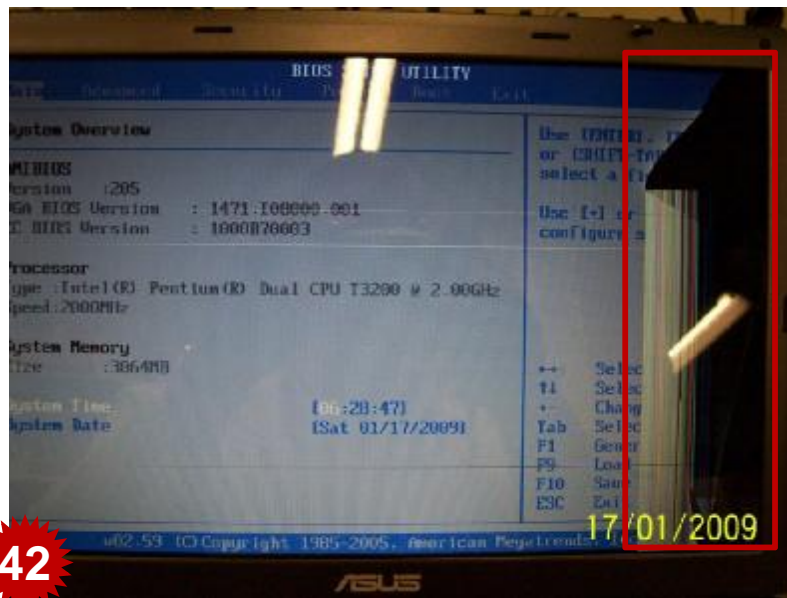
ODD



Damage	Comments	Repair Way	Exchange Parts	In Warranty	Out of Warranty
Separate from the main machine [Figure 41]	ODD separates from the main machine, data cable damaged	-	Exchange the ODD	Charge	Charge



LCD



42



43

Damage	Comments	Repair Way	Charge
LCD Broken [Figure 42-43]	Panel crack and mural are considered caused by drop, press or misuse	Replace the panel	Yes



Machine Oxidation



44



45

Damage	Comments	Repair Way	Charge
Liquid inside [Figure 44-45]	It may be caused by misuse, ex: (a) Customer try to self-repair and use wrong way to clean to get the oxygenation. (b) Splashed by liquid.	Check other parts and complete function first. Replace the damage parts	Yes



Machine Burned



46



47

Damage	Comments	Repair Way	Charge
NB Burned [Figure 46-47]	Require to check the cause of such case carefully and seriously. If unable to judge the endures responsibility, please feedback to ASUS HQ.	Replace the hole NB	TBD





Chapter 3

Pretest Fixture Package








ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
20-201400952	PCMCIA Test Fixture	1	
22-220000100	Y-Cable	1	
70-C1OG10-01	Com Port Test Fixture	1	
70-C1OO30-0	Printer Test Fixture	1	
16-000500007	Tools Package	1	








ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
22-060001280	Audio Test Fixture	1	
80-C1G036-0103	ENG_EZUSB Board v1.0	2	
60R-R00LA1000	LAN Loop Back	1	
80-C1G036-0301	ENG_EZUSB Board v2.0	4	
22-060000050	USB Cable	4	



ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
80-DH1000-16	SCB-2408U/MI/ASUS NB	1	
14-011000040	IEEE 1394 Cable	1	
14-000500500	MINI USB Cable	1	
04-267001510	Adapter10W AD620(US/JPN/TWN)	1	
20-521055550	CD-ROM Testing CD	1	







ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
20-J30320101	VGA Board Disassembly	1	
22-240000310	Screwdriver For S200	1	
04-266001000	NB Adapter (90W)	1	
04-266000500	NB Adapter (50W)	1	
14-110060370	Power Cord	2	



ASUS Pretest Fixture Package

Part Number	Fixture Name	Amount	Photo
	CRT/LCD Monitor	1	
20-T004C2304	Express Card	1	
20-521006264	SD Card	1	
20-T00371104	MS Pro Card	1	



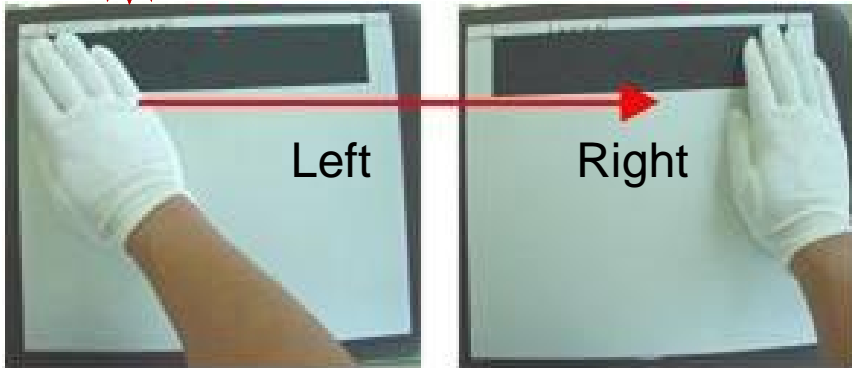
Chapter 4

Visual Inspection



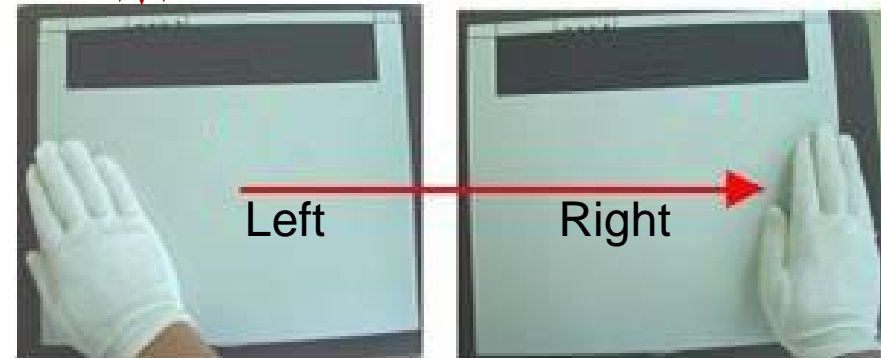
Visual Inspection Manner

1.1



1.2

Top



Bottom

1.Method and sequence for appearance inspection

(1)Take down notes while reading:

While inspecting, the operator's focus need to follow by their hand.



Back Cover & Shake LCD

2.1



1. Check if the scratch, stain, paint, bright line of LCD cover are under inspection spec.
2. Tear LCD back cover Mylar.

2.2

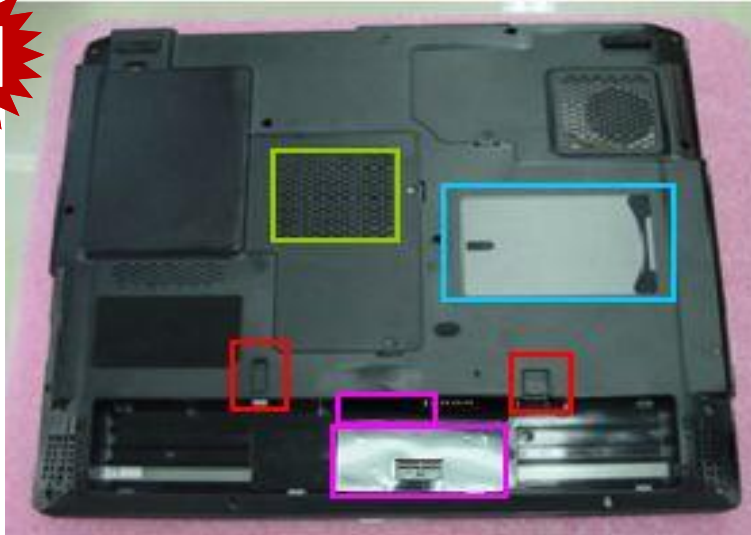


1. Shake LCD module 3 times to check if hinges have some noise.



Check Bottom Case

3.1



3.2



1. Checking if the gap in the bottom case is under spec.
2. Check bottom case appearance that scratch, stain, print, color different, spray paint defector others appearance need to tally with inspection standard.
3. Check battery latch function well.
4. Check hole of speaker and DDR door no foreign objects.
5. Check the top case Mylar and battery Mylar are on NB, can't permit they are oblique or loss.
6. Check business card folder is stick on bottom case (for ASUS A3 series)
7. Check if scratch, stain, print, bright line of bottom case are under inspection spec.



Check Border Area

4.1



1. Check if the scratch, stain, paint, bright line of front side are under inspection spec.
2. Don't tear bottom case IR lens Mylar.

4.2



1. Check if the scratch, stain, print, bright line of right side are under inspection spec.

4.3

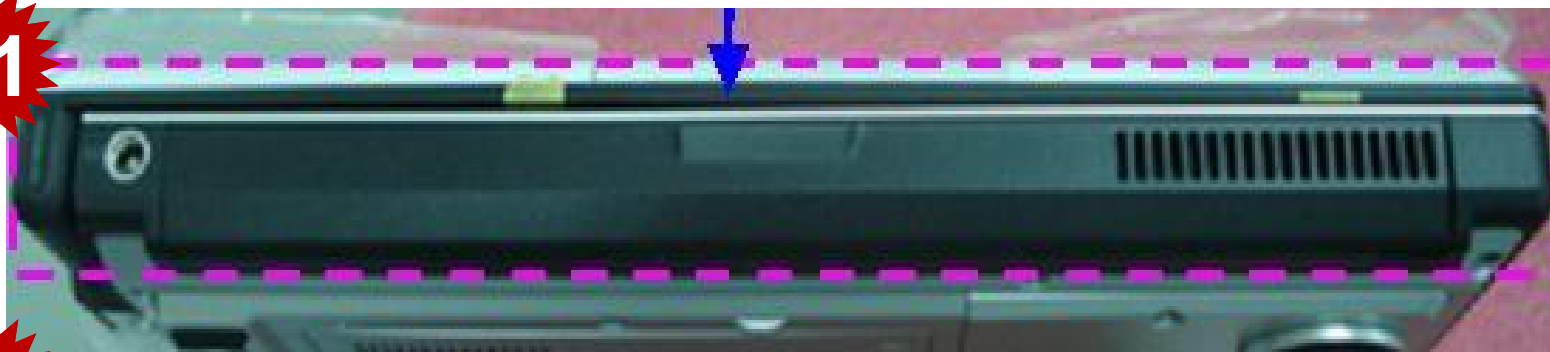


1. Check if the scratch, stain, paint, bright line of rear side are under inspection spec.
2. Tear LCD back cover Mylar.



Check Inside Cover

5.1



5.2



1. Check if the scratch, stain, paint, bright line of left side under inspection spec.
2. Checking if there is any foreign object inside each jack of NB left side.

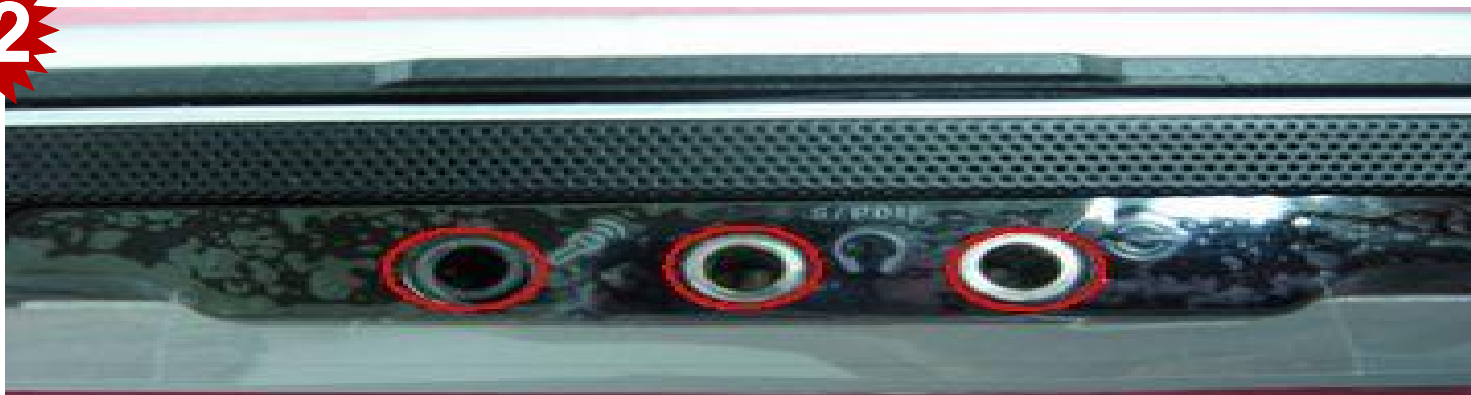


Check Gap & Device

6.1



6.2



1. Checking if the gap between LCD module and top case is under spec.
2. Checking if the scratch or pant off on the NB front side is under spec.
3. Checking if there is any foreign object inside each jack of NB left side.



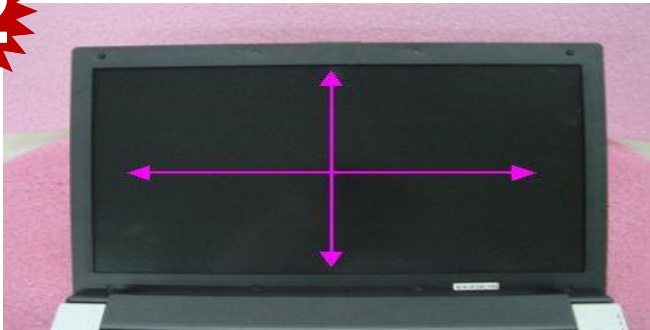
Check LCD Surface & Rubber

7.1



1. Confirm if there is scratch on the LCD panel.
2. Checking the gap between LCD panel and LCD bezel is under spec.
3. Confirm if LCD panel is glare.

7.2

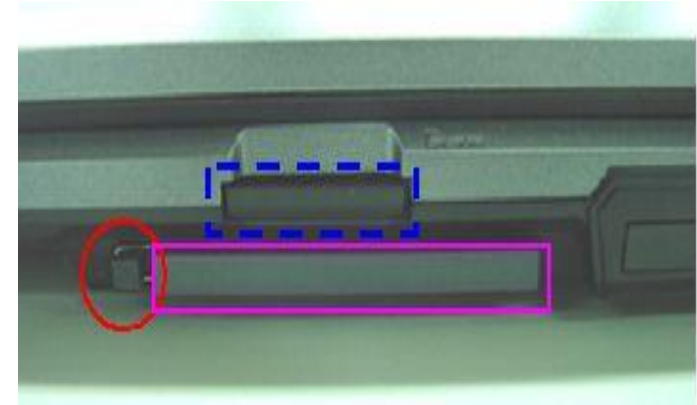


1. Confirm if there are 4 Mylar & 4 rubbers on the LCD bezel.
2. Check printing logo on LCD bezel.



Check PCMCIA & Top Case

8.1



1. Check if the PCMCIA push button function well.

8.2

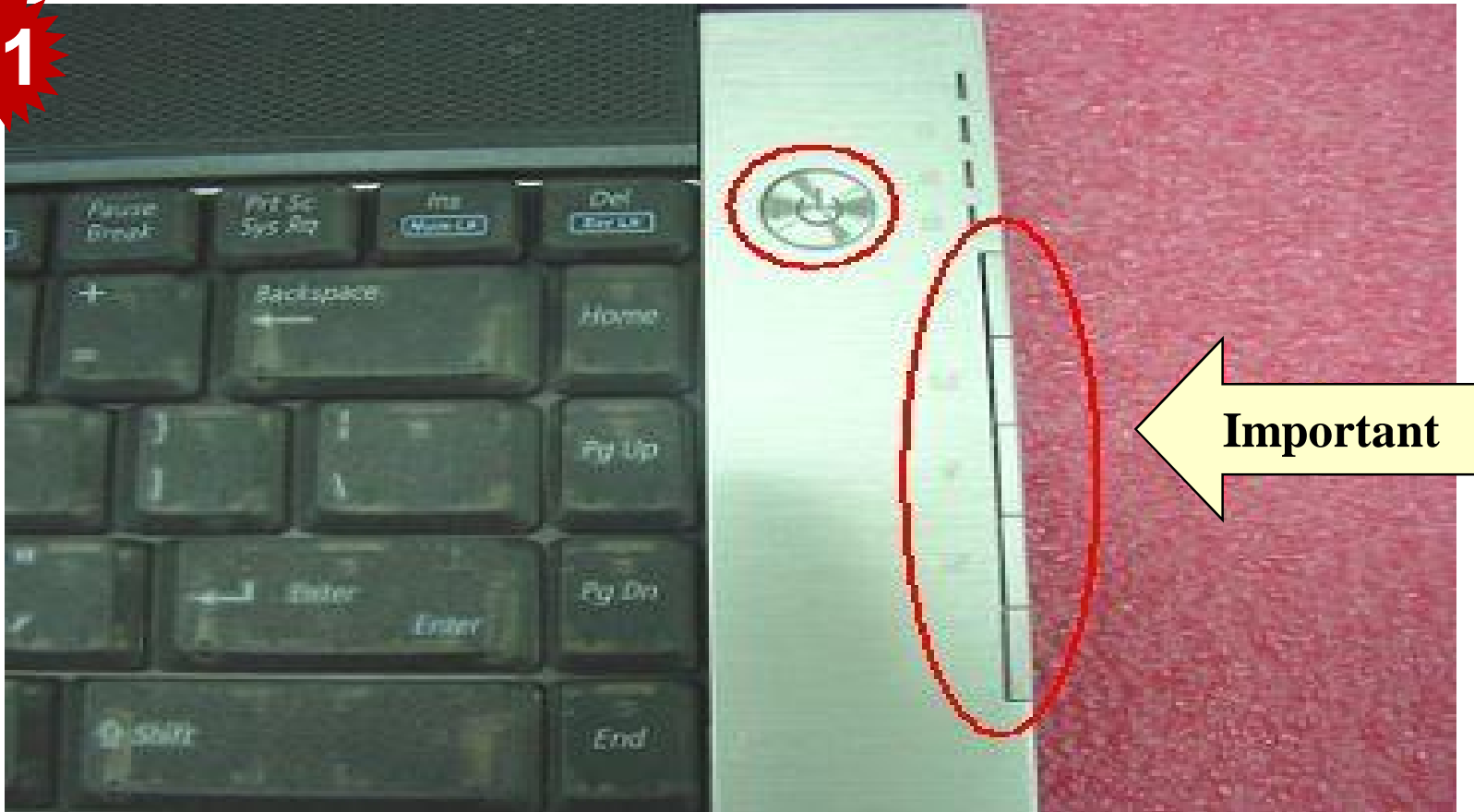


1. Checking if there are Windows, Intel inside label, ATI label, CSR label, TNT label, Dolby label, Spec label, Promotion label had stuck on the top case.



Check Function Button

9.1

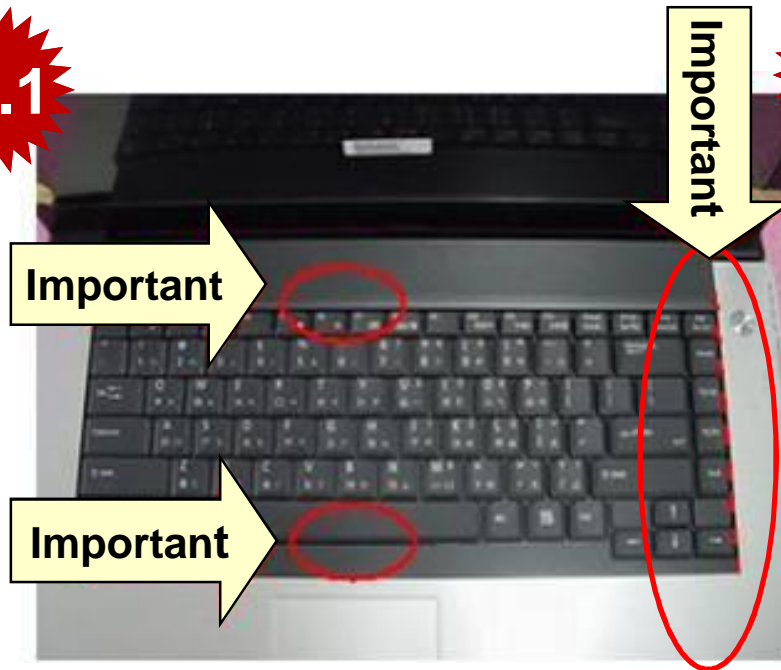


1. Checking if the power button and fast key works smoothly. Checking if the gap, scratch, painting off, color difference or others surface defect of button are under standard.

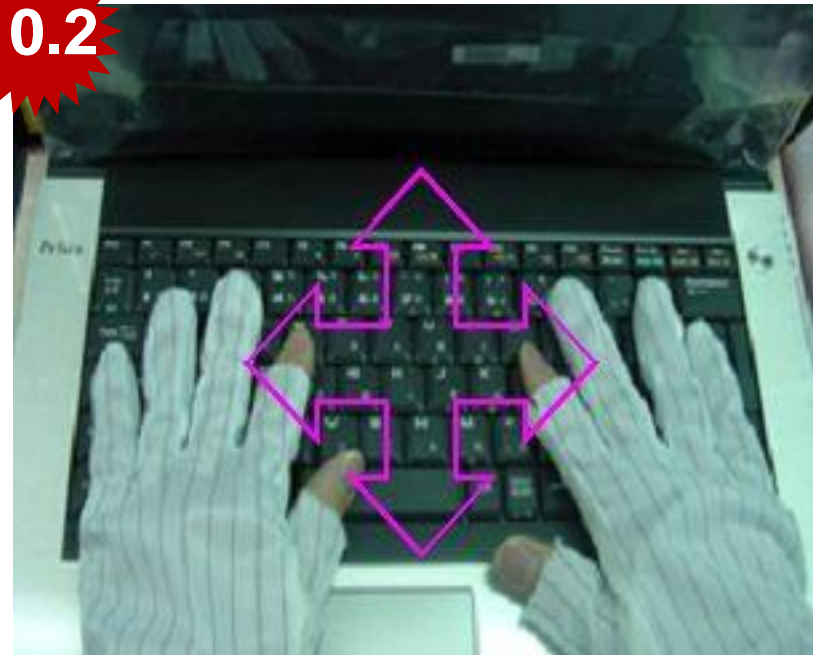


Check Keyboard

10.1



10.2



1. Checking if the K/B right side cannot see VAG thermal module.
2. Make sure K/B and K/B cover wedge in top case and GAP under spec.
3. Use the palm of both hands to hit lightly K/B and make sure key of K/B have not floating, missing, noise and moving.



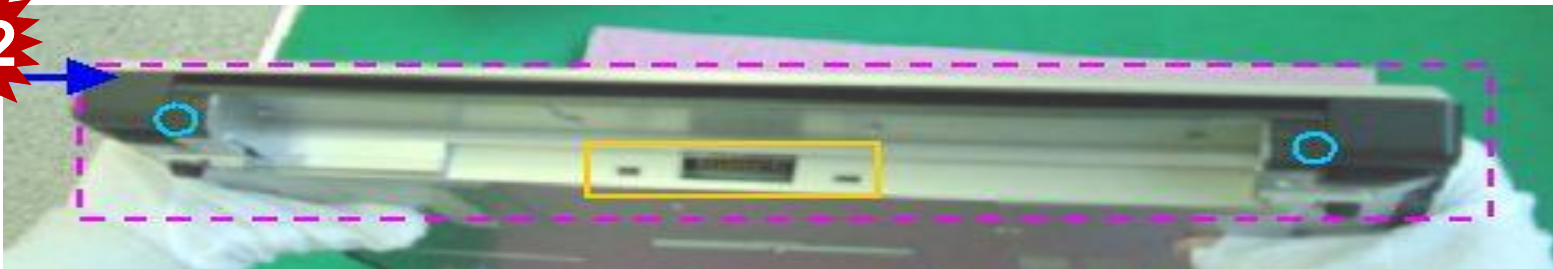
Check Bottom Case & Charge Pin

11.1



1. Checking if the gap, scratch, stain, painting off, color difference or others surface defect of bottom case are under standard.
2. Checking if the battery can slide smoothly and functioning.

11.2

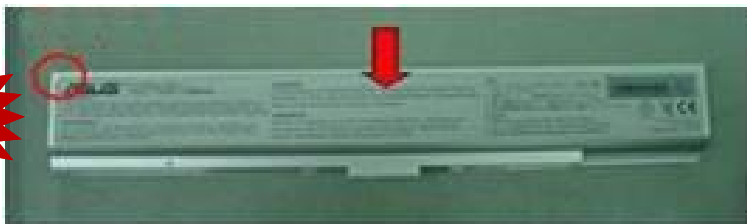


1. Checking the gap between hinge covers and top case are under spec.
2. Checking if the scratch or pant off on the NB back side is under spec.
3. Checking if there is any foreign object inside each jack of NB right side.
4. Checking if there are 2 screws Mylar in the bottom case.

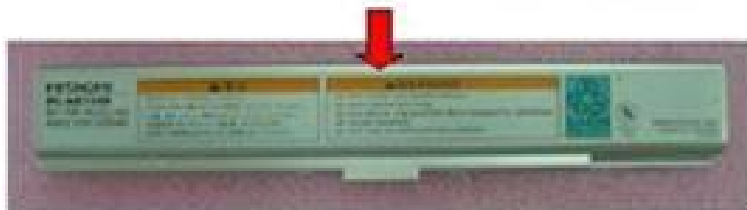


Check Battery & Warranty Label

12.1



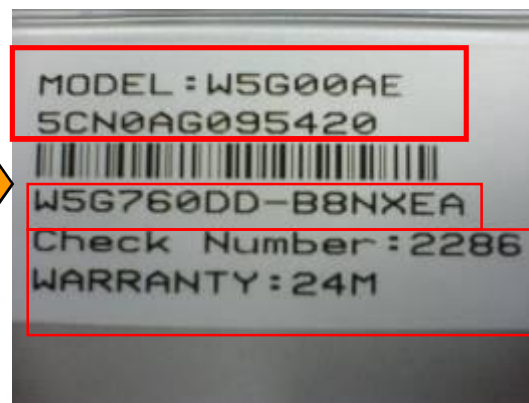
For ASUS



For
HITACHI(OEM)

Label cannot stuck over frame.

12.2



Check machine model
number Name EX:W5AE



Check All Label & Cotton Paper

13.1



1. Confirm that number of 90 S/N pasted on machine is the same with on traveling card on bottom case.
2. Take the label-checking Mask putting on bottom case.

13.2



Put a anti-dust on the keyboard.



Chapter 5

Plug Fixture



Plug Fixture



1

1. Connect LAN Loop Back Plug



2

2. Put Test CD into ODD and reboot to run ASUS NB pretest programs



Plug Fixture



3. Connect USB port plug.



4. Connect MS PRO card plug.



Chapter 6

Updating BIOS



Content

- n Flashing BIOS introduction
- n Preparation
- n Flashing BIOS in Operating System
- n Flashing BIOS in DOS mode
- n Flashing BIOS in BIOS setup utility
- n Jig Board



Flashing BIOS Introduction

Updating BIOS could be the first option for the troubleshooting of the Notebook PC because the new BIOS revision will solve some problems. (Read the BIOS release information provided on the download site before using.)

Four ways to flashing BIOS:

Software:

1. Winflash in Operating System
2. Aflash in FREEDOS
3. Easy Flash in BIOS SETUP UTILITY

Hardware:

4. Jig Board

Warning:

Careless updating can result in your Notebook PC having more problems.



Preparation

Before starting flashing BIOS, please plug in the adapter so as to avoid the power off in the flashing process, which will lead to the BIOS flashing failure.





Flashing BIOS in Operating System



Precondition

Two preconditions mentioned before starting to update the BIOS in OS:

1. Download the exact BIOS files from the ASUS website
 - Before starting updating BIOS in OS, please verify the NB model then download the corresponded BIOS files from the ASUS website.
 - The BIOS file can be found in the website as below:
<http://www.asus.com>
2. Please ensure the updating program 'Winflash Utility' has been installed in your NB before you start BIOS updating.

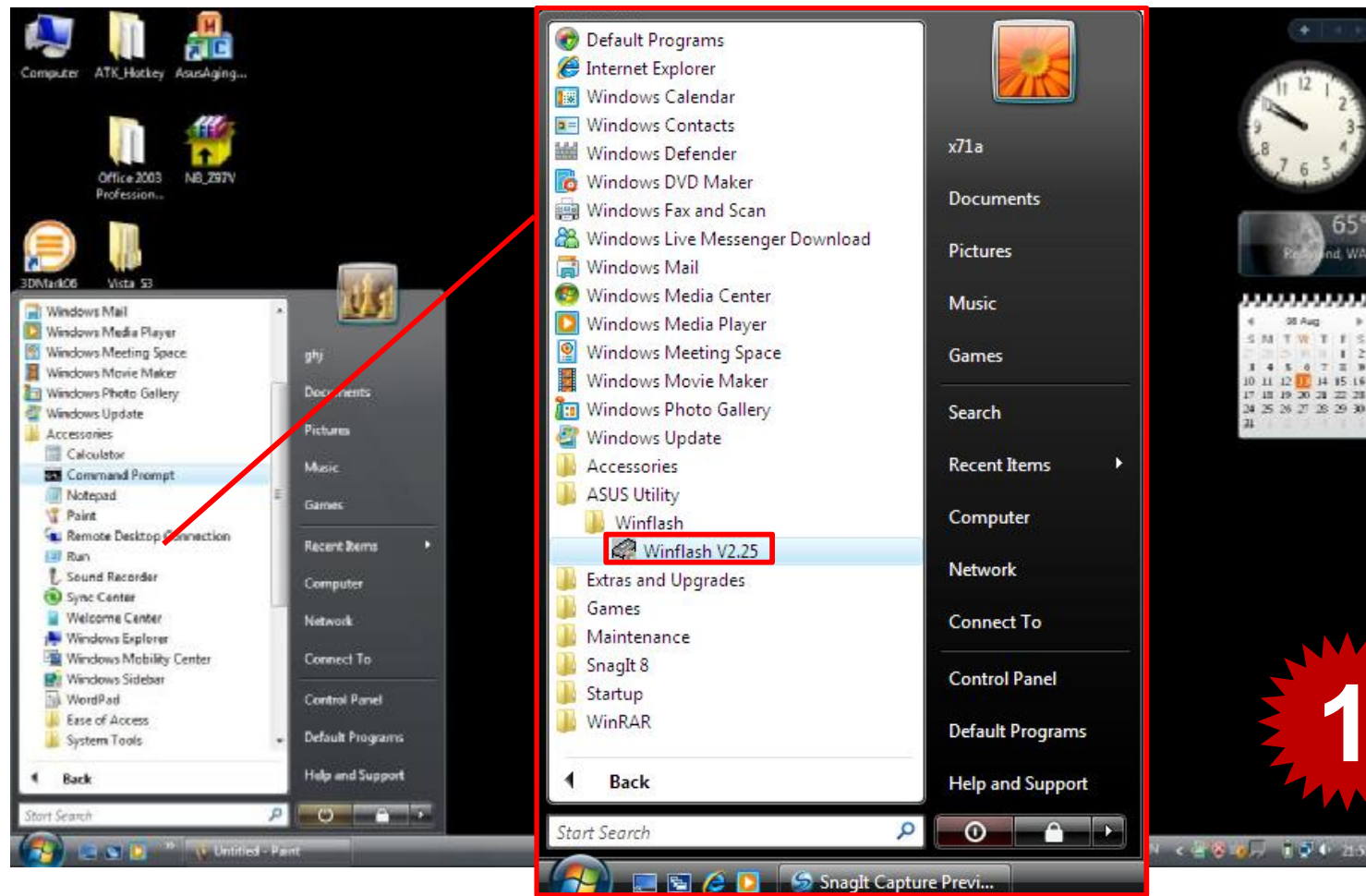
The program can be installed from the Driver & Utility CD.



Flashing BIOS in Operating System

1. Open the program “Winflash”

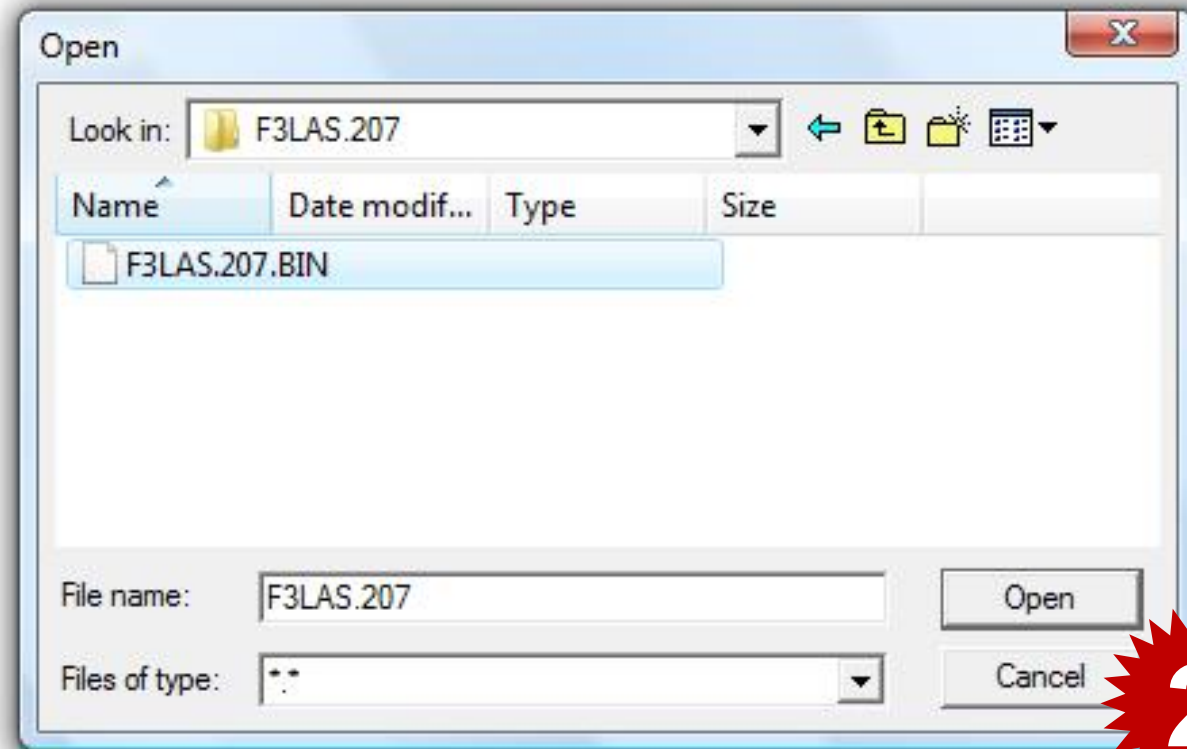
Click **Start\All Programs\ASUS Utility\Winflash\Winflash V2.25**





Flashing BIOS in Operating System

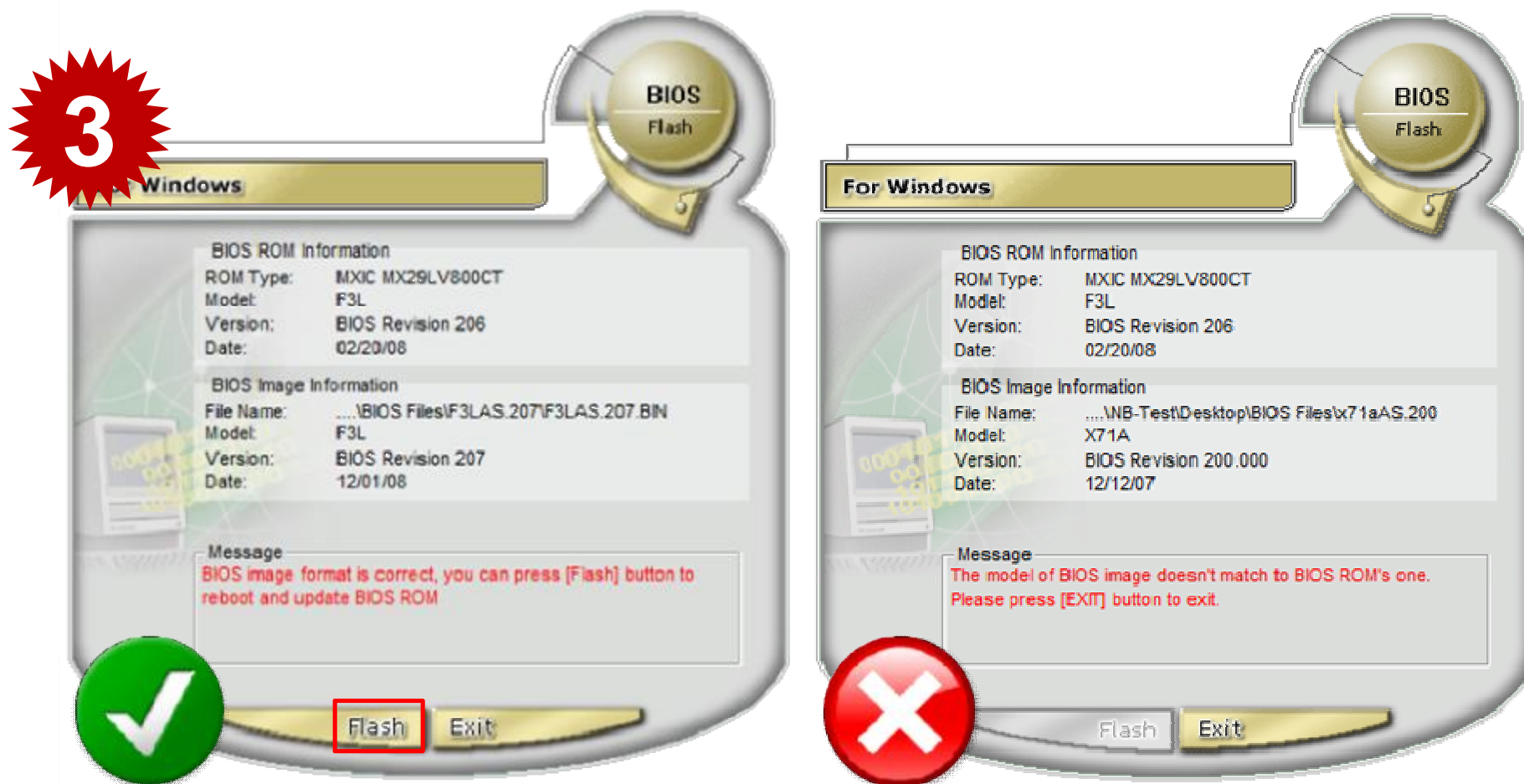
2. Select and open the BIOS files downloaded from the website.





Flashing BIOS in Operating System

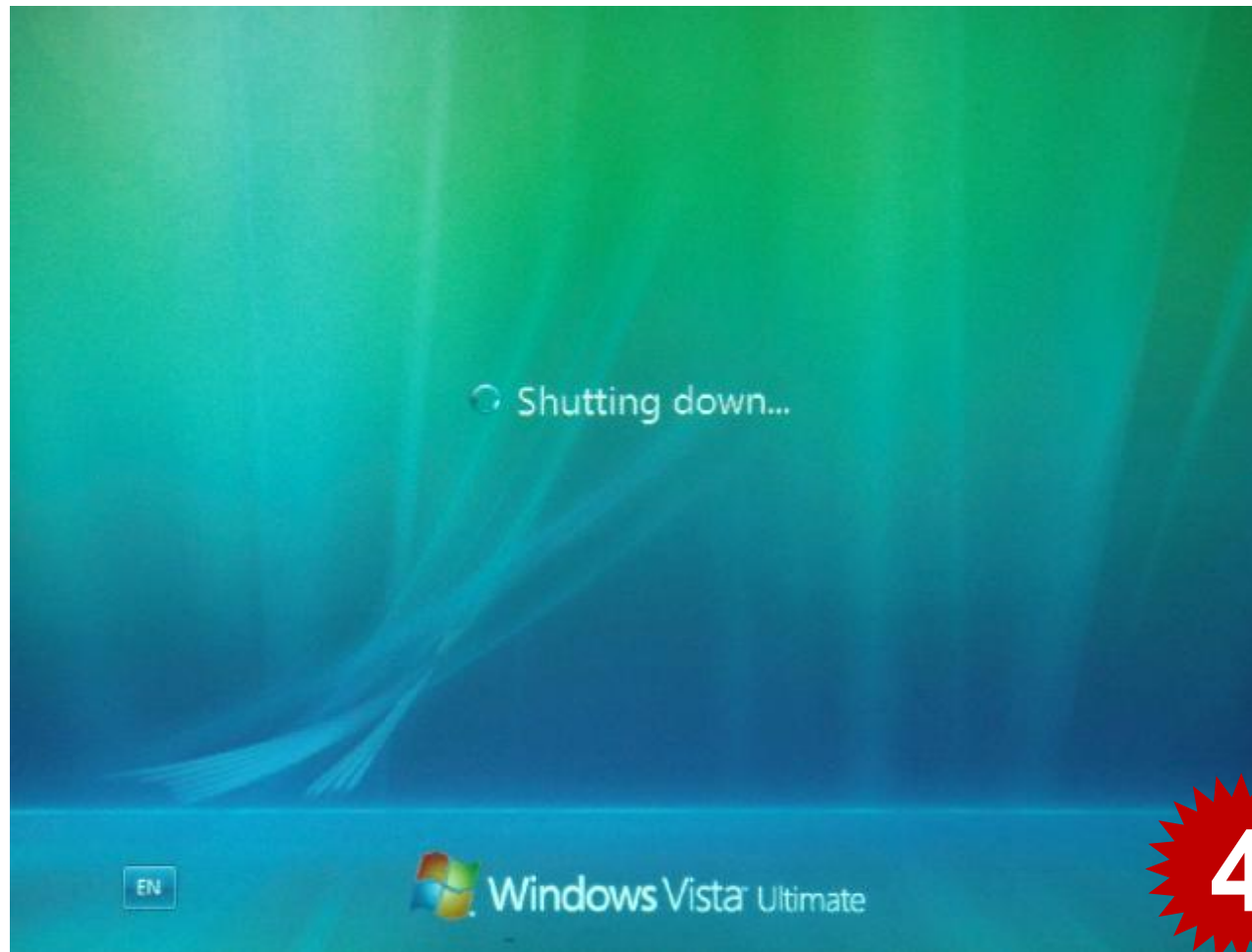
3. Confirm the BIOS information is correct and press “Flash” button to start.





Flashing BIOS in Operating System

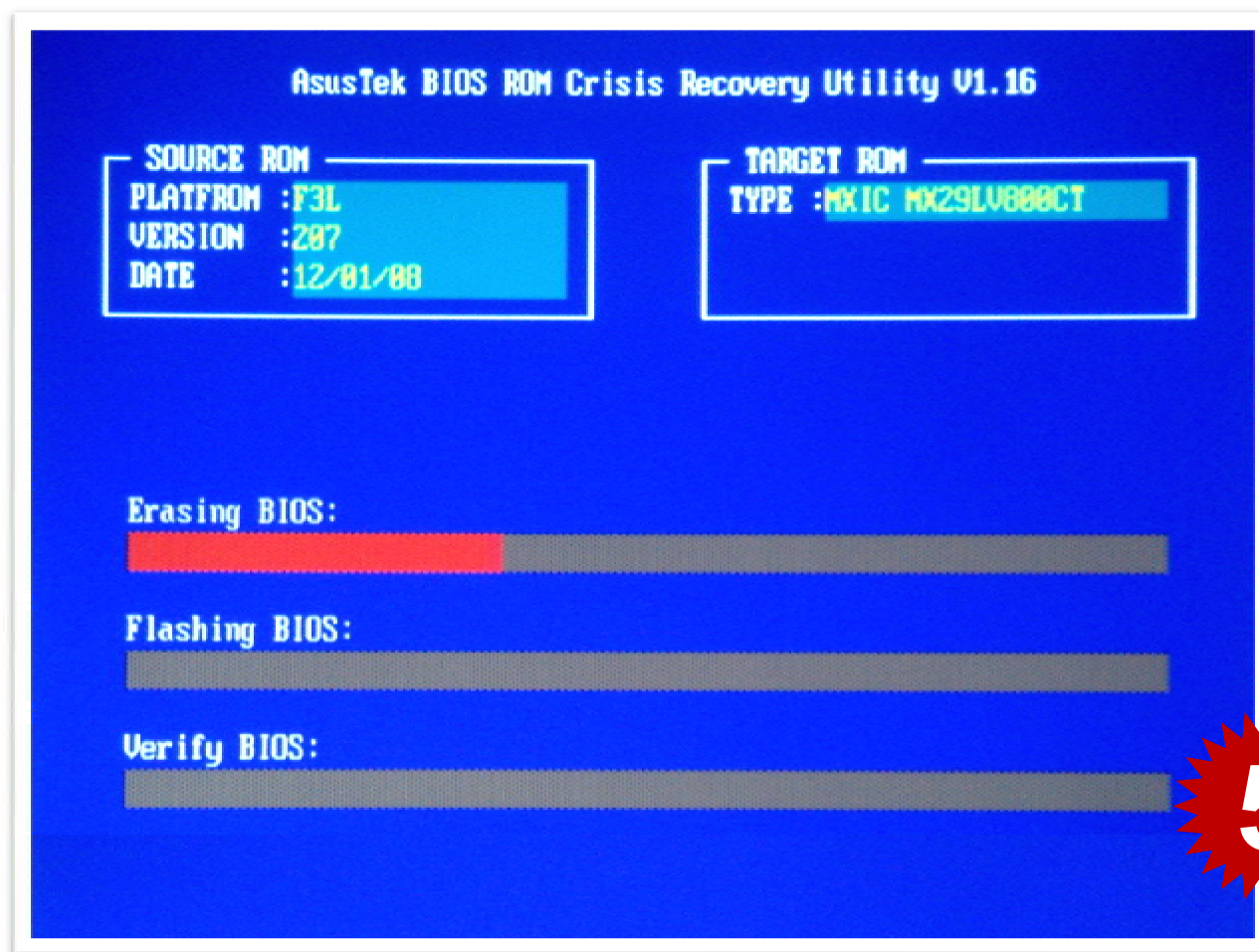
4. The system would shut down automatically and reboot again to enter the easy flash interface to start flashing the BIOS.





Flashing BIOS in Operating System

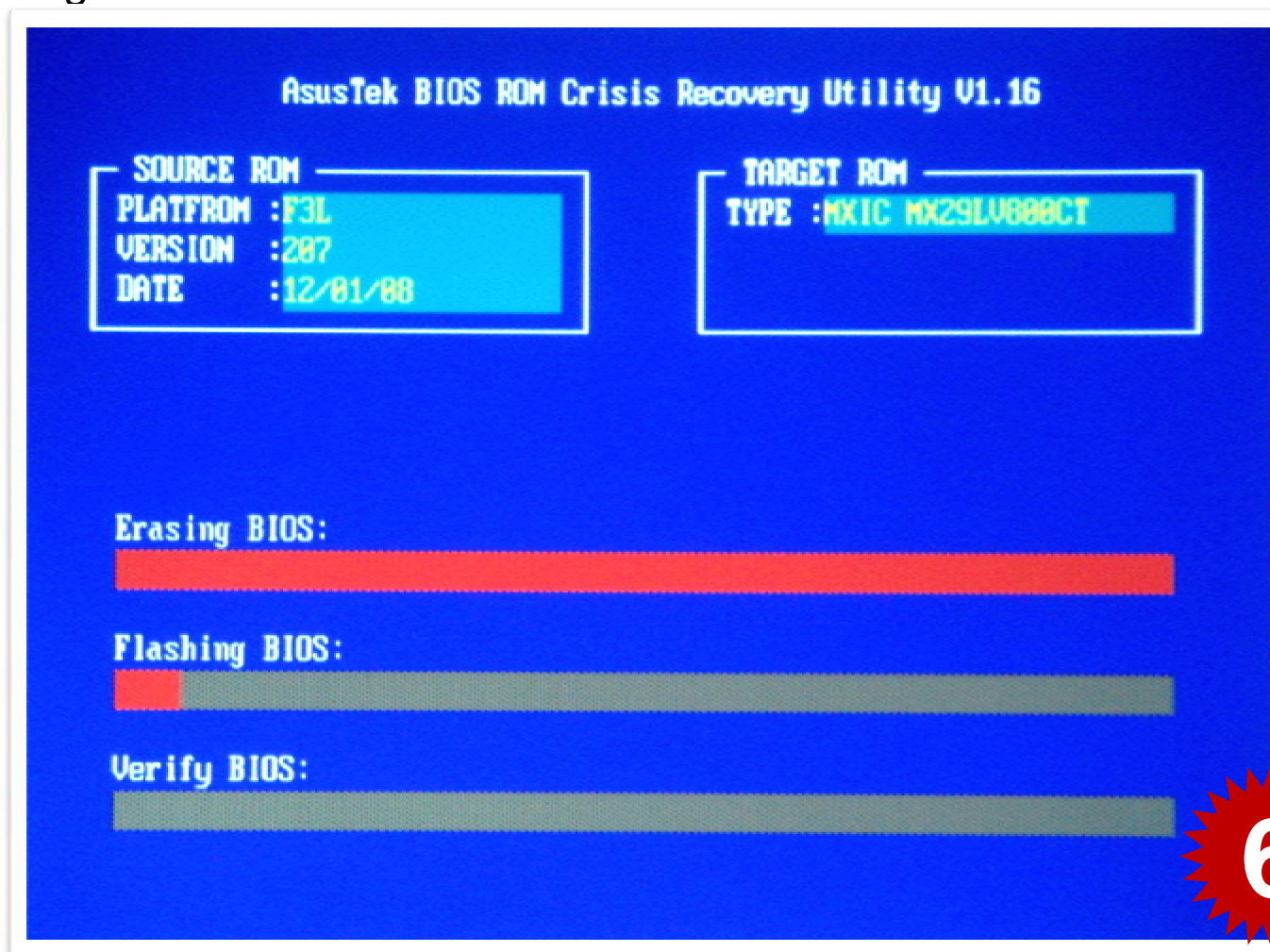
5. Erasing BIOS





Flashing BIOS in Operating System

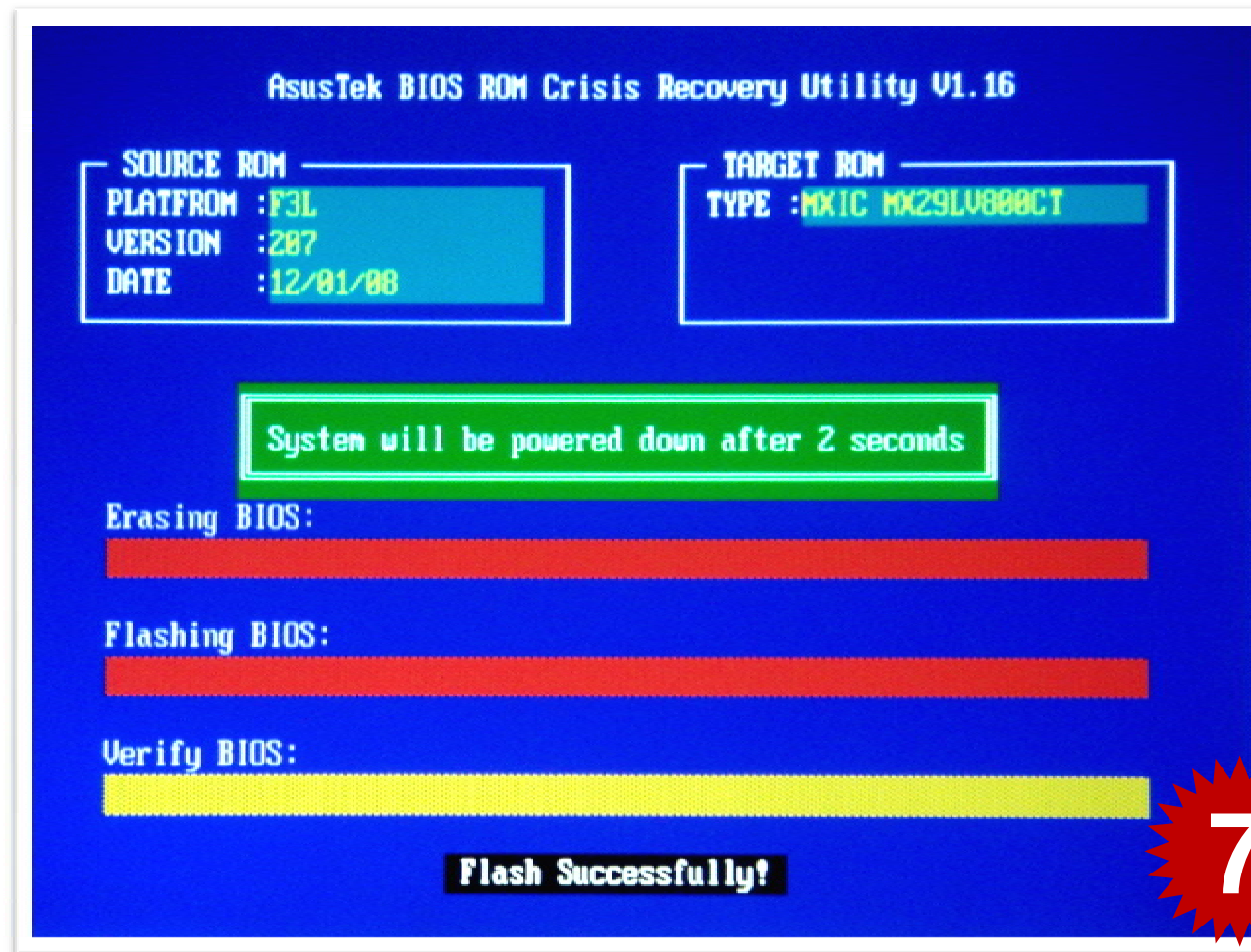
6. Flashing BIOS





Flashing BIOS in Operating System

7. Verify BIOS. After flash successfully, the system would shut down automatically.

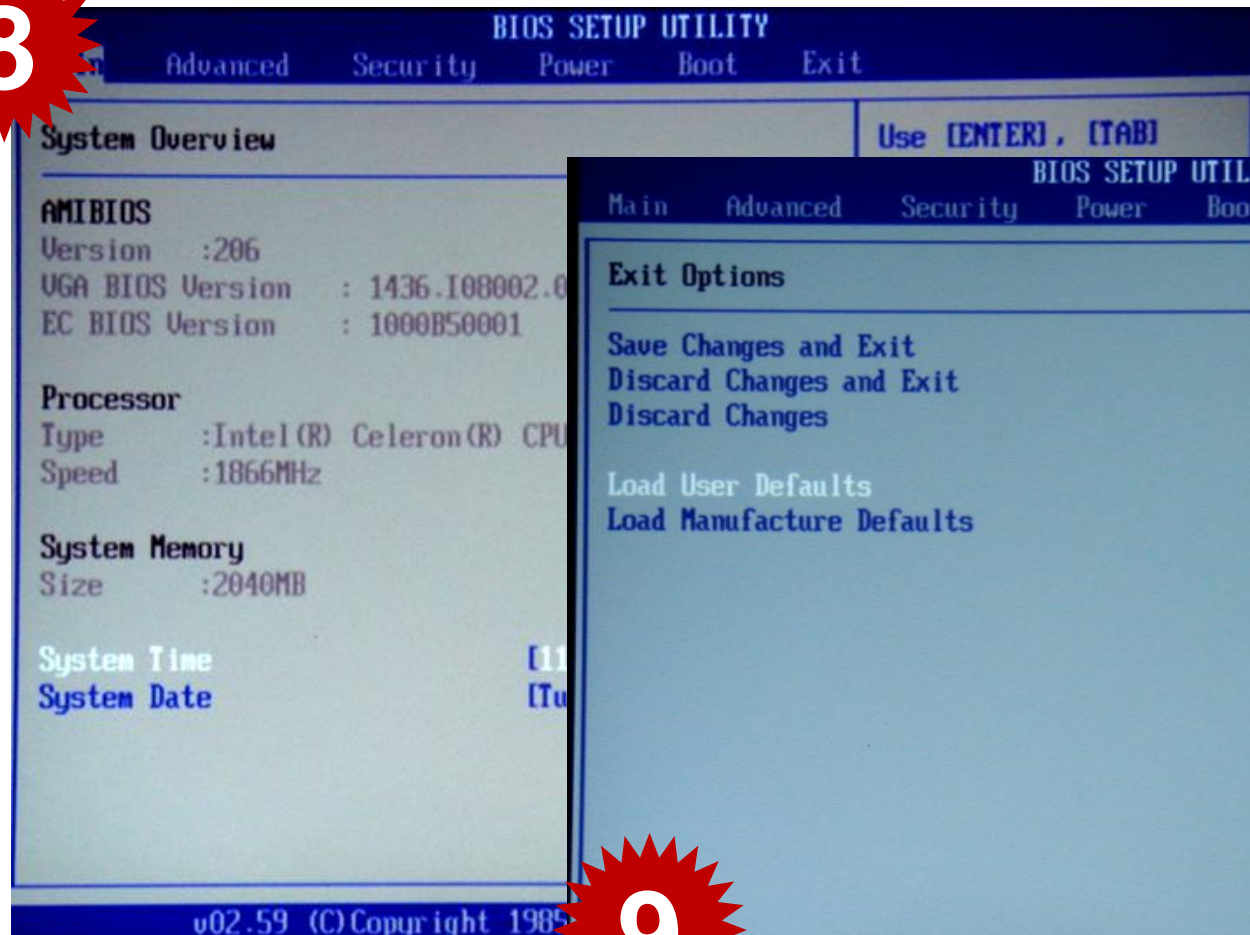




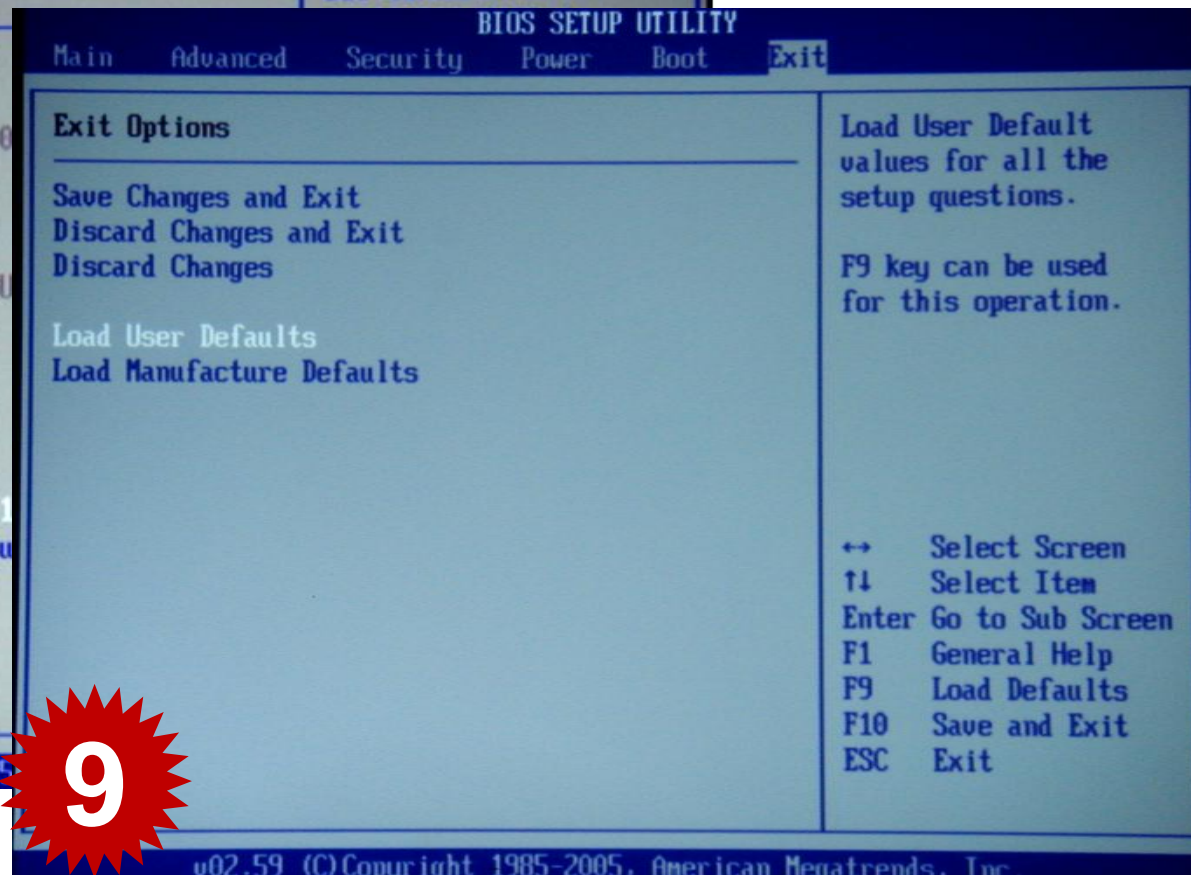
Flashing BIOS in Operating System

8. Please restart and enter the BIOS setup interface to **Load User Defaults**.

8



9





Warning



- The model is not matching
- The version is not the latest or older than the BIOS

In these two situations, the BIOS could not be updated. The message would show and the “Flash” button would not be activable.



Downgrade BIOS

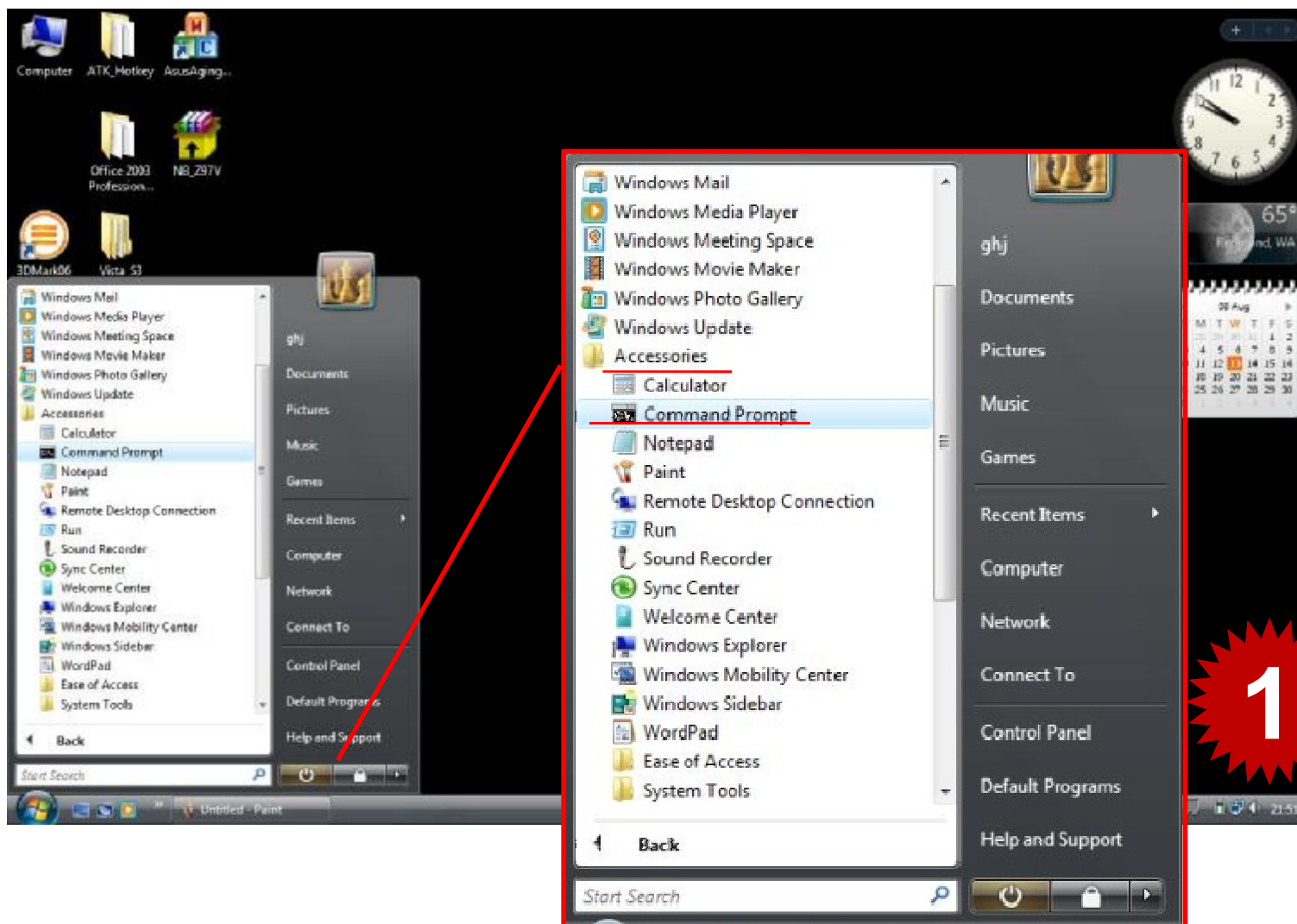
Description:

With the new version of the BIOS, some functions would be disabled. In this case, downgrade BIOS would be adapted. For the WINFLASH program could only upgrade BIOS, one command should be run before the downgrade.



Downgrade BIOS

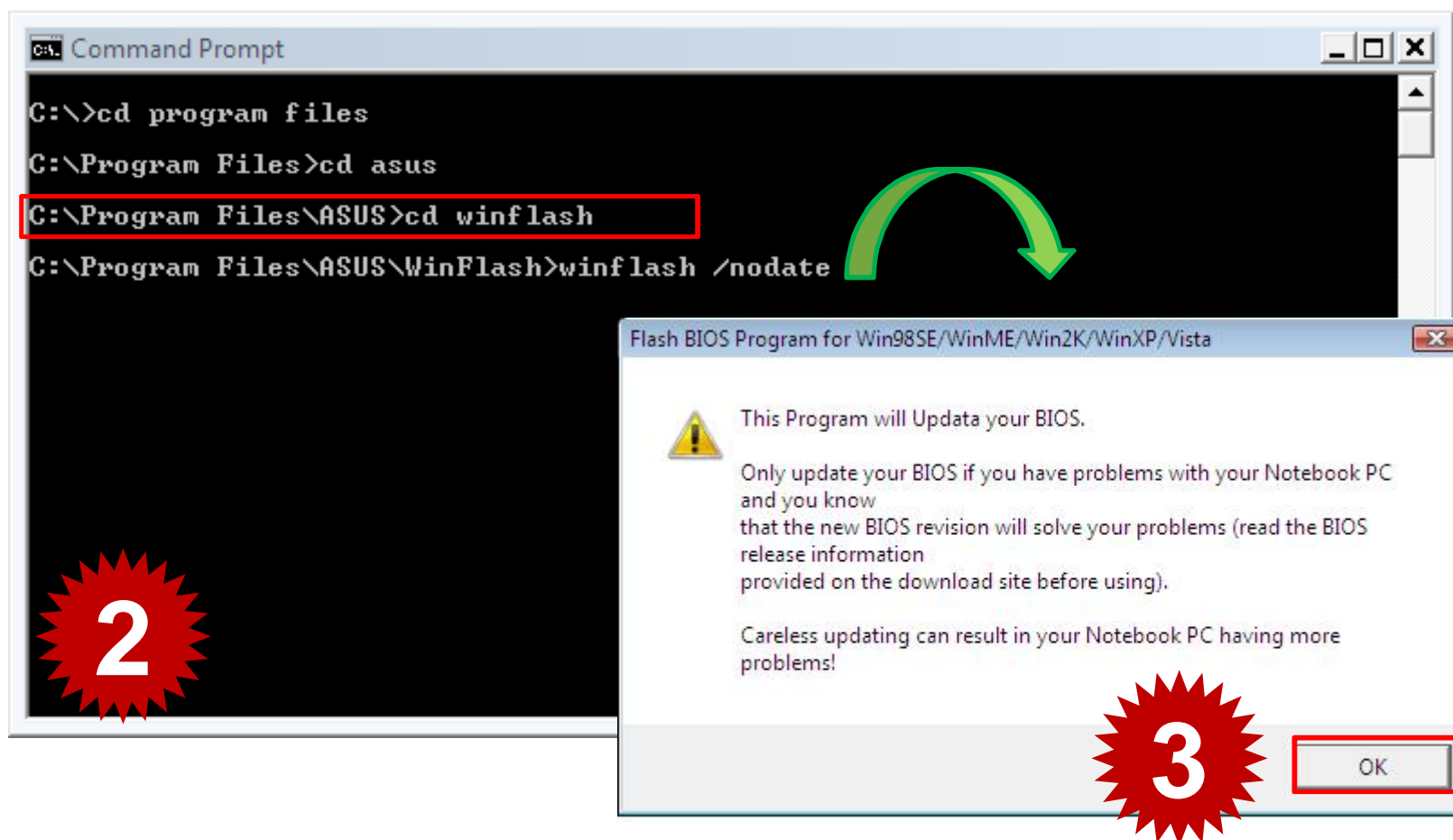
1. Enter into the DOS mode in OS





Downgrade BIOS

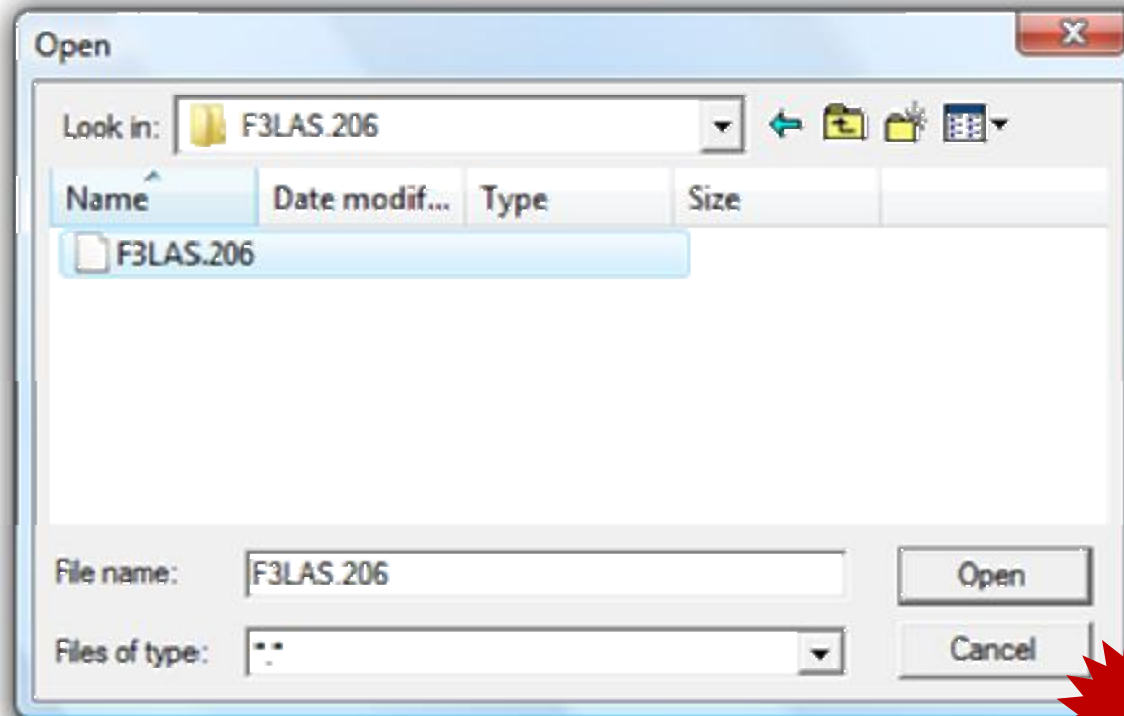
2. Run “winflash /nodate” in the DOS mode
(The path is as below)





Downgrade BIOS

3. Choose the BIOS image file.

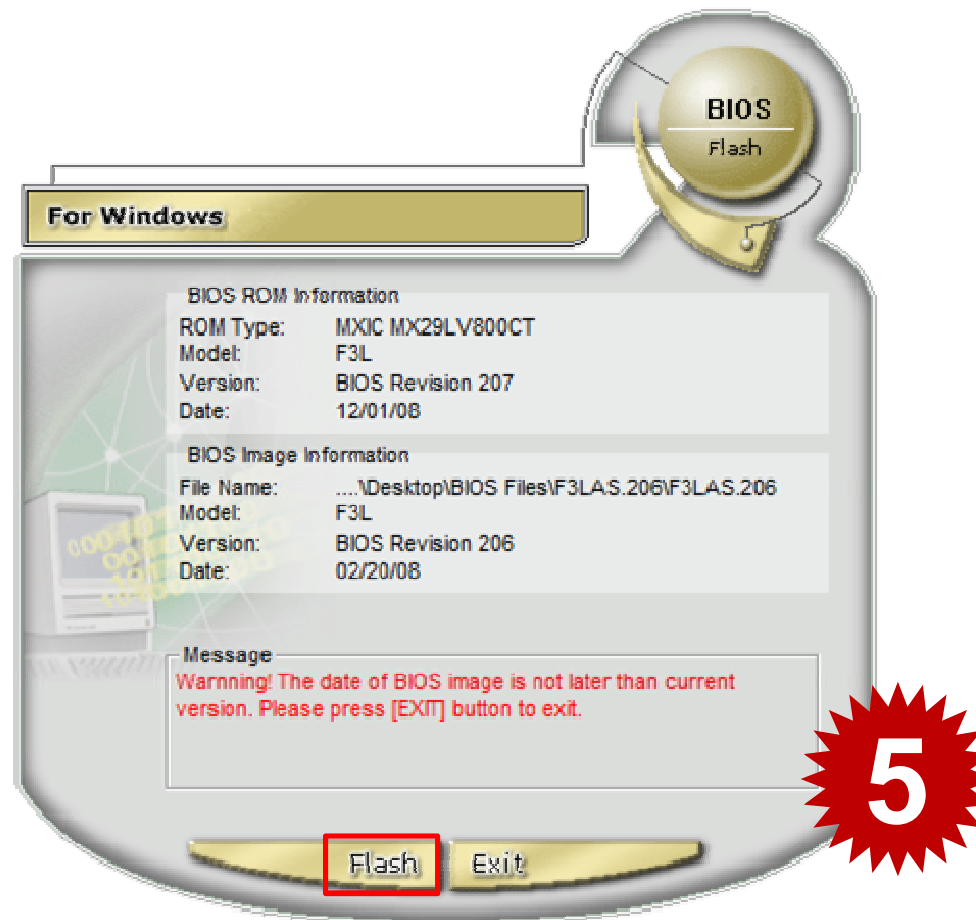


4



Downgrade BIOS

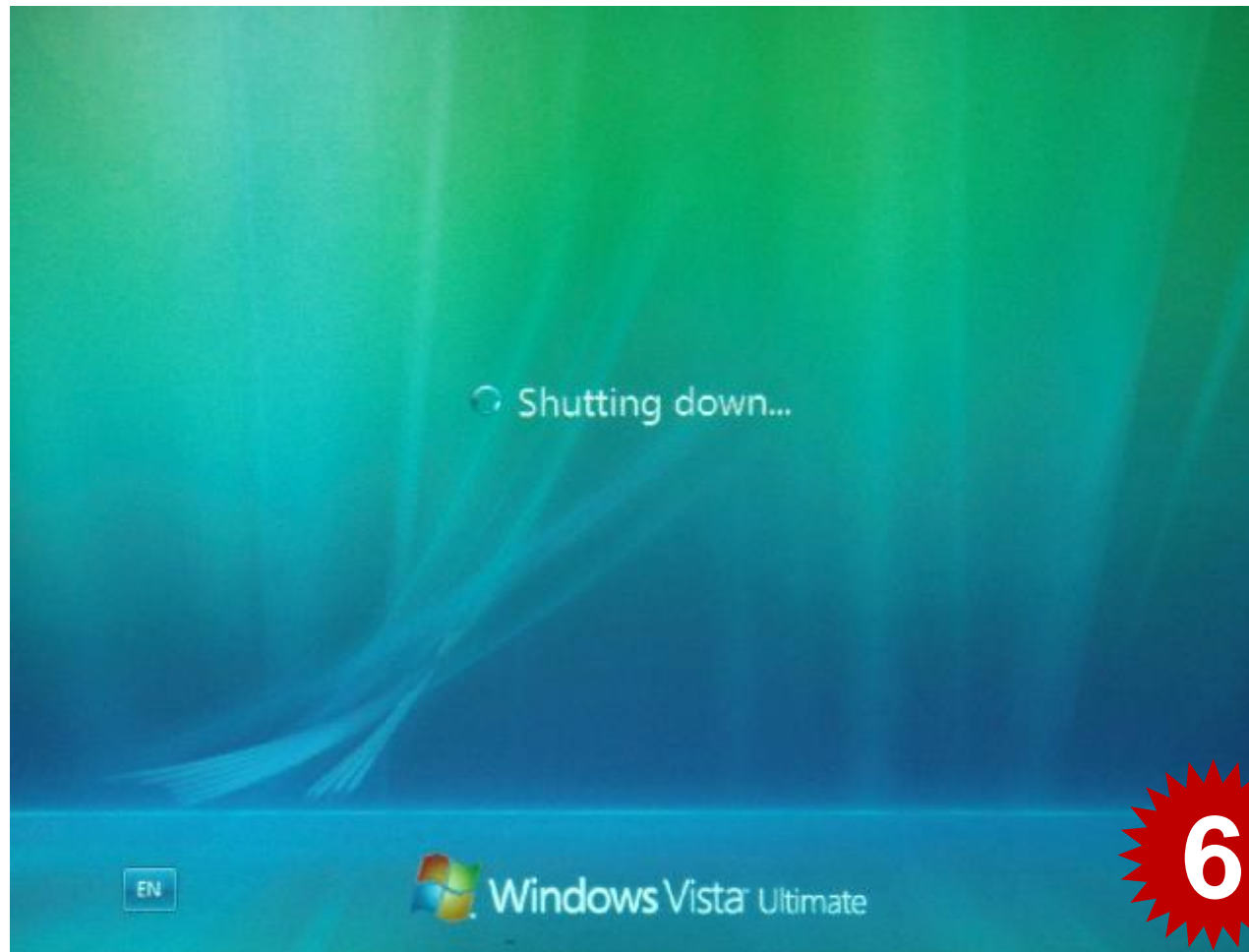
4. Start to Downgrade.





Downgrade BIOS

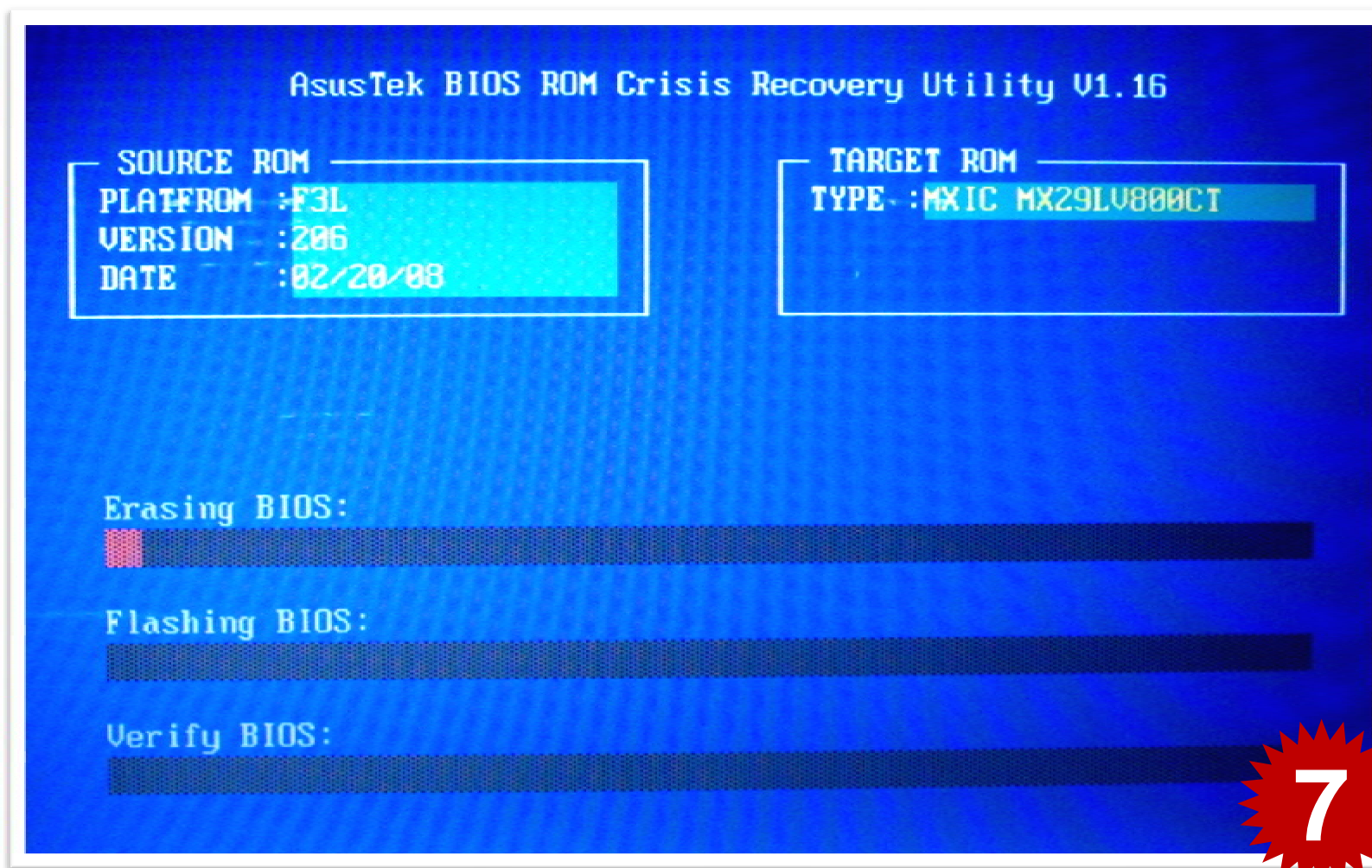
5. The system would shut down automatically and reboot again to enter the easy flash interface to start flash the BIOS.





Downgrade BIOS

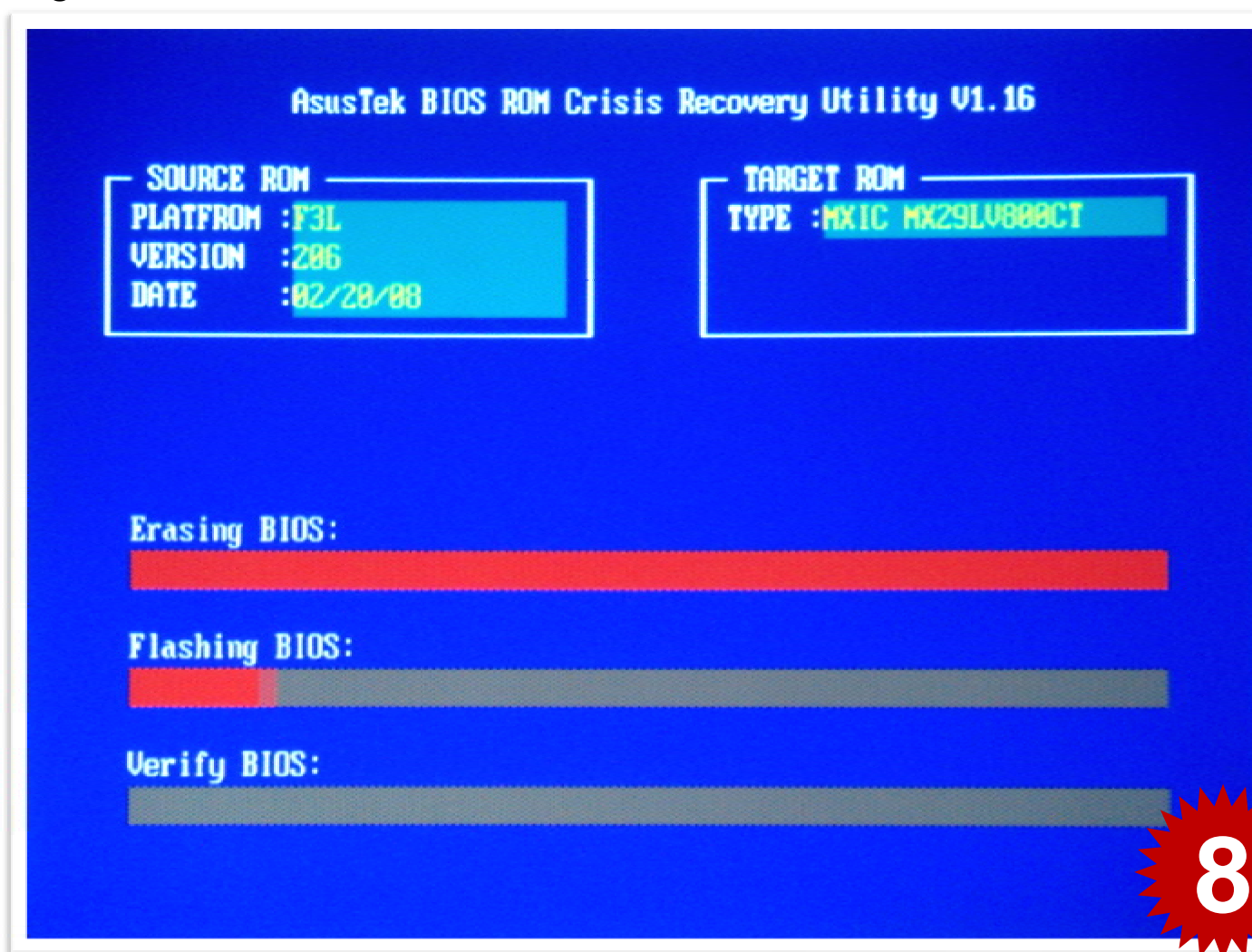
6. Erasing BIOS





Downgrade BIOS

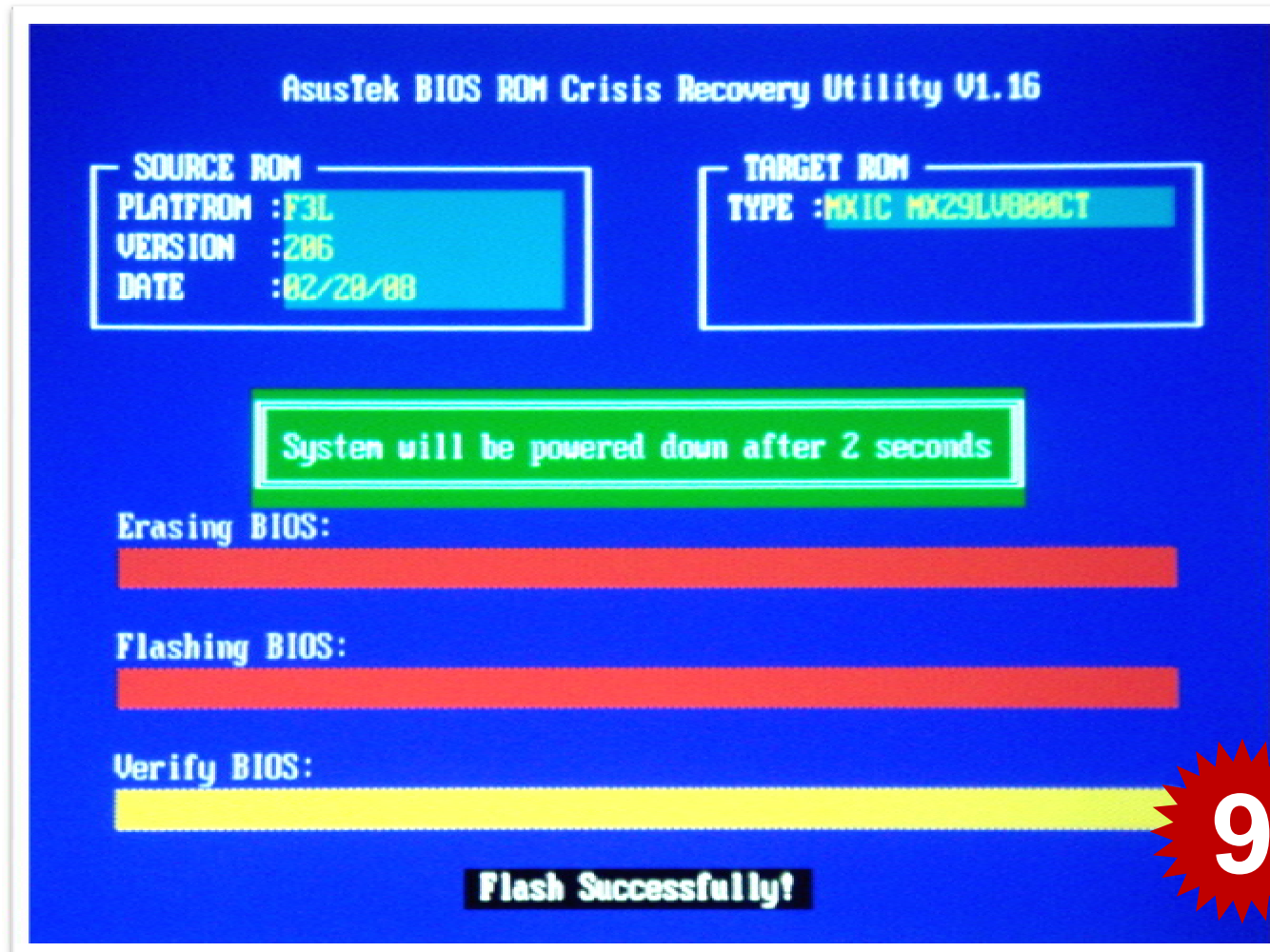
7. Flashing BIOS





Downgrade BIOS

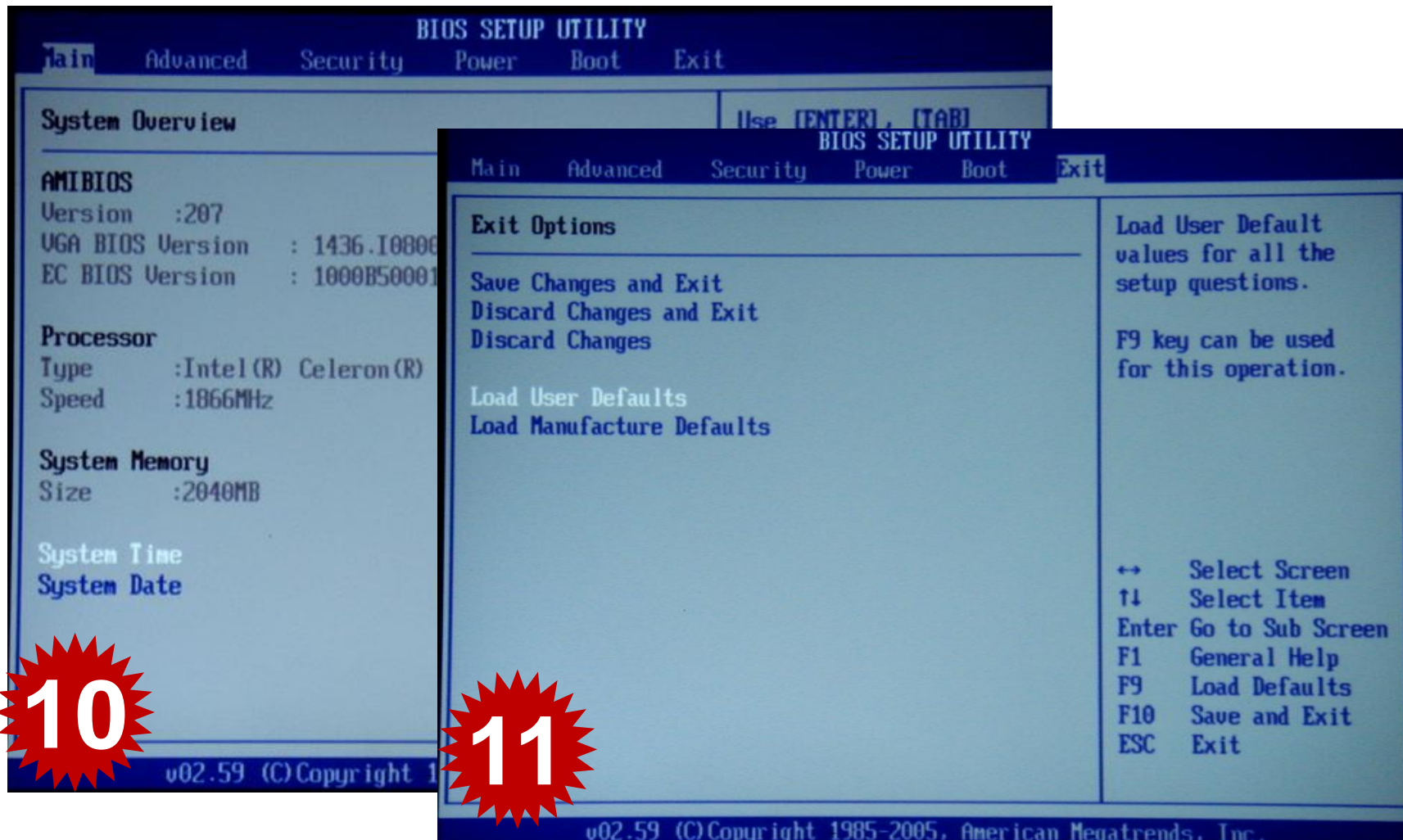
8. Verify BIOS. After flash successfully, the system would shut down automatically.





Downgrade BIOS

9. Please restart and enter the BIOS setup interface to **Load User Defaults**.





Flashing BIOS in FREEDOS



Preparation

- n Download the BIOS image files from the SIP website (As it mentioned in the flashing BIOS in OS)
- n Prepare a USB DOS booting flash disk with the “AFLASH.EXE” program and the BIOS image files in.





Flashing BIOS in FREEDOS

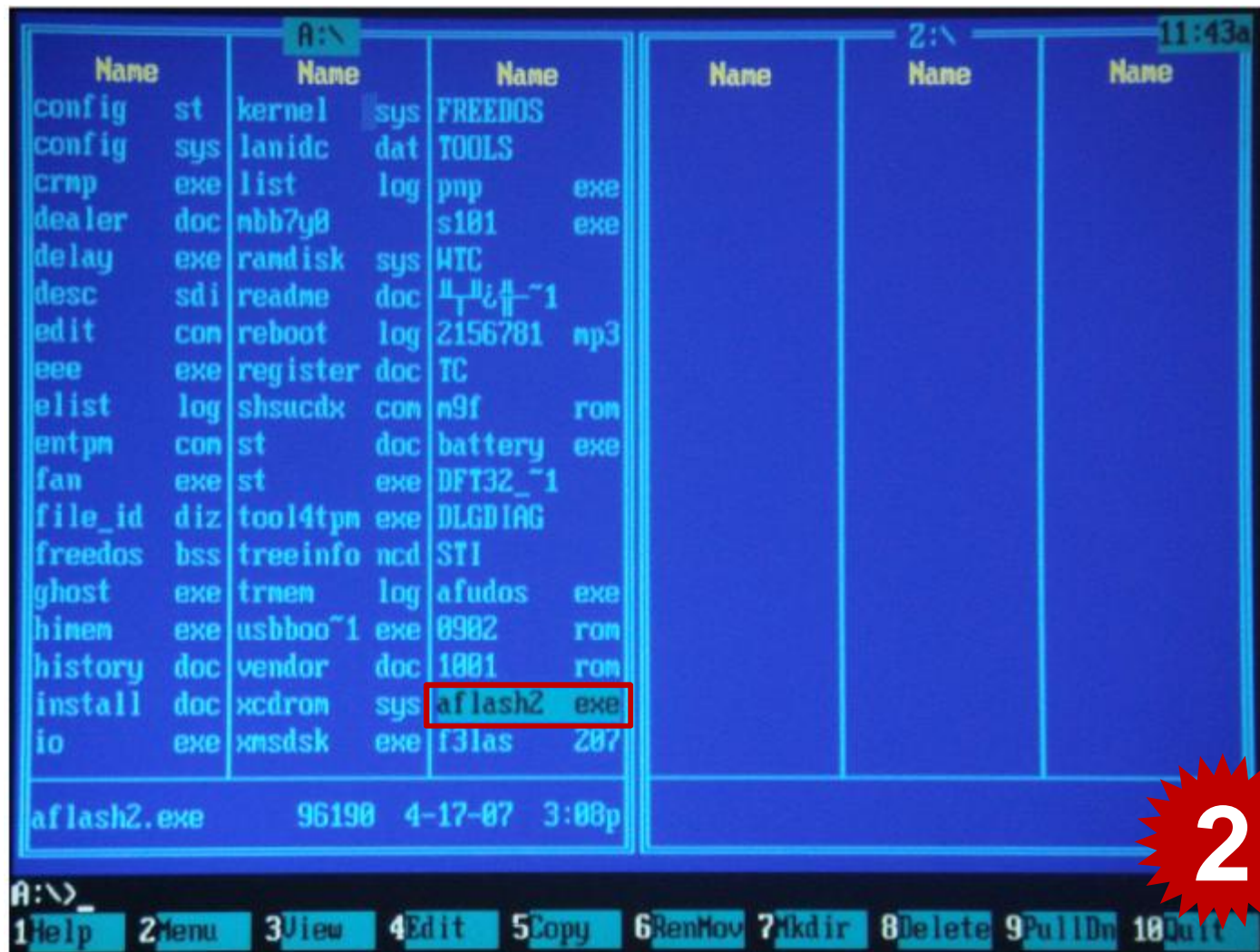
1. Booting from the USB to enter into the FREEDOS





Flashing BIOS in FREEDOS

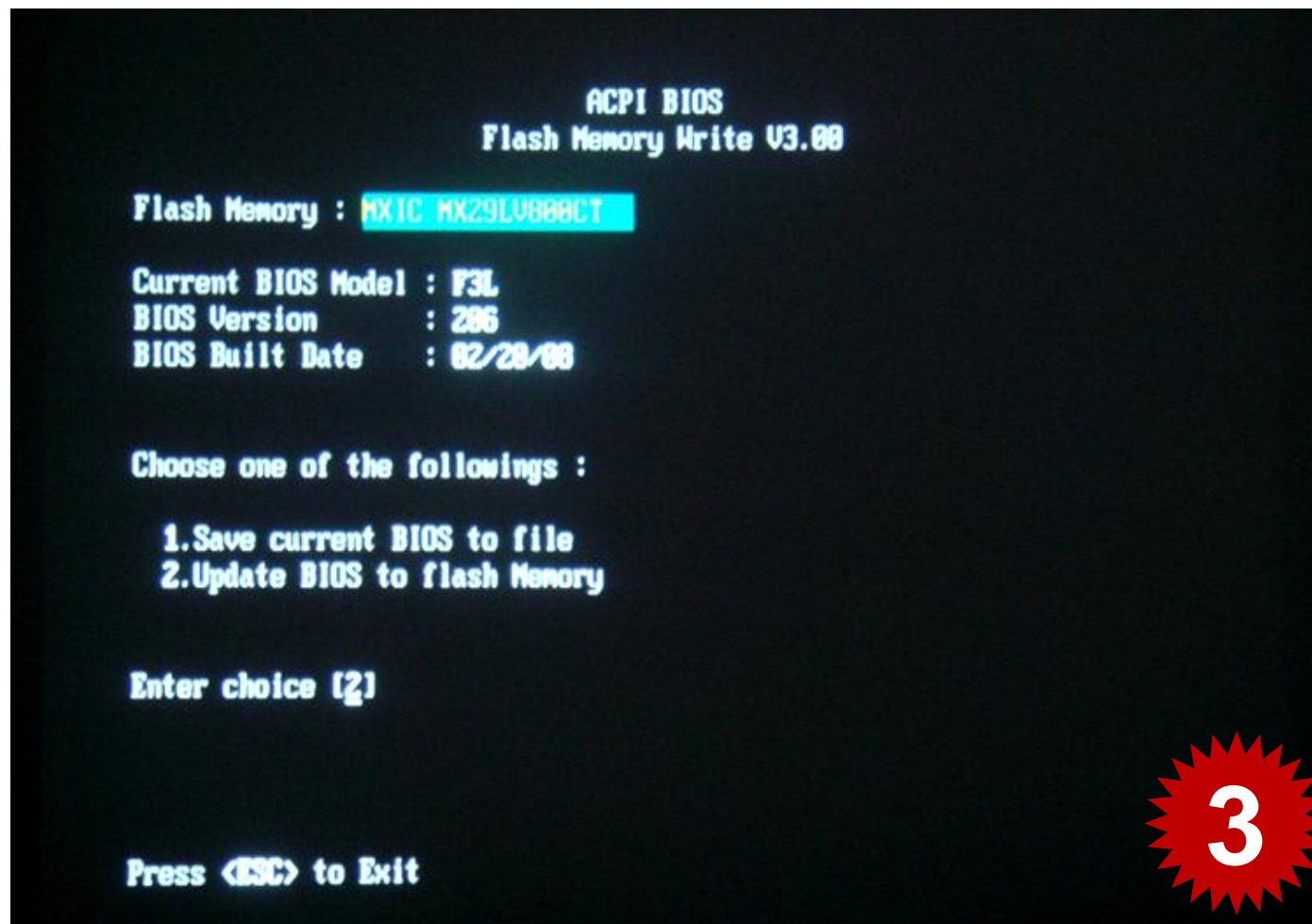
2. Select aflash2.exe to run updating BIOS program





Flashing BIOS in FREEDOS

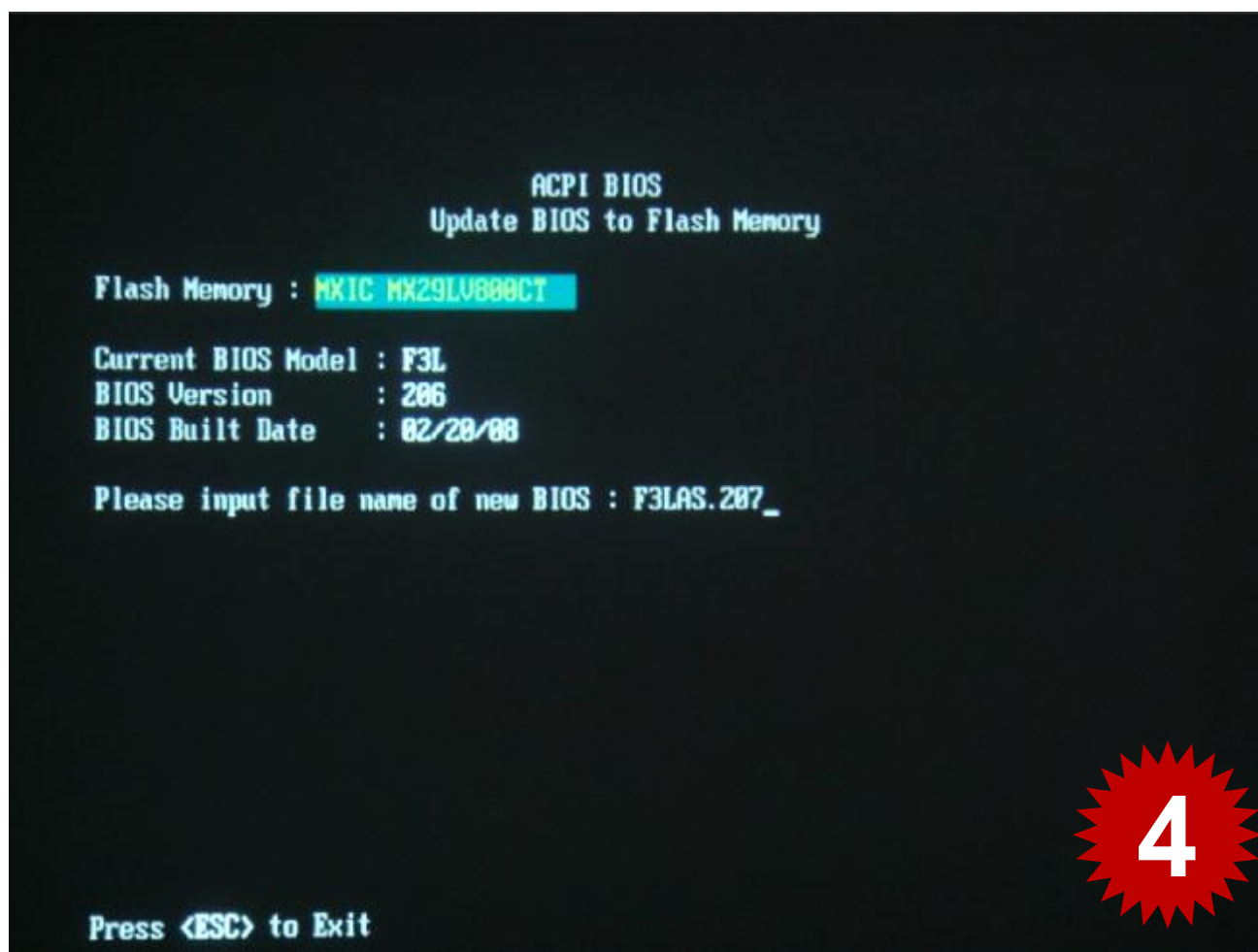
3. Select <2.update BIOS to new version>





Flashing BIOS in FREEDOS

4. Input file name of new BIOS





Flashing BIOS in FREEDOS

5. Confirm the new BIOS name and make sure to start flashing

In this stage, please carefully check the model and version is correct then enter “Y” to continue, otherwise the system will flash a wrong BIOS which will cause the problem of no boot.

```
ACPI BIOS
Update BIOS to Flash Memory

BIOS Model:
[Current] F3L
[ Update] F3L

BIOS Version:
[Current] 286
[ Update] 287

Date of BIOS Built:
[Current] 02/28/88
[ Update] 12/01/88

Checksum of new BIOS is F723

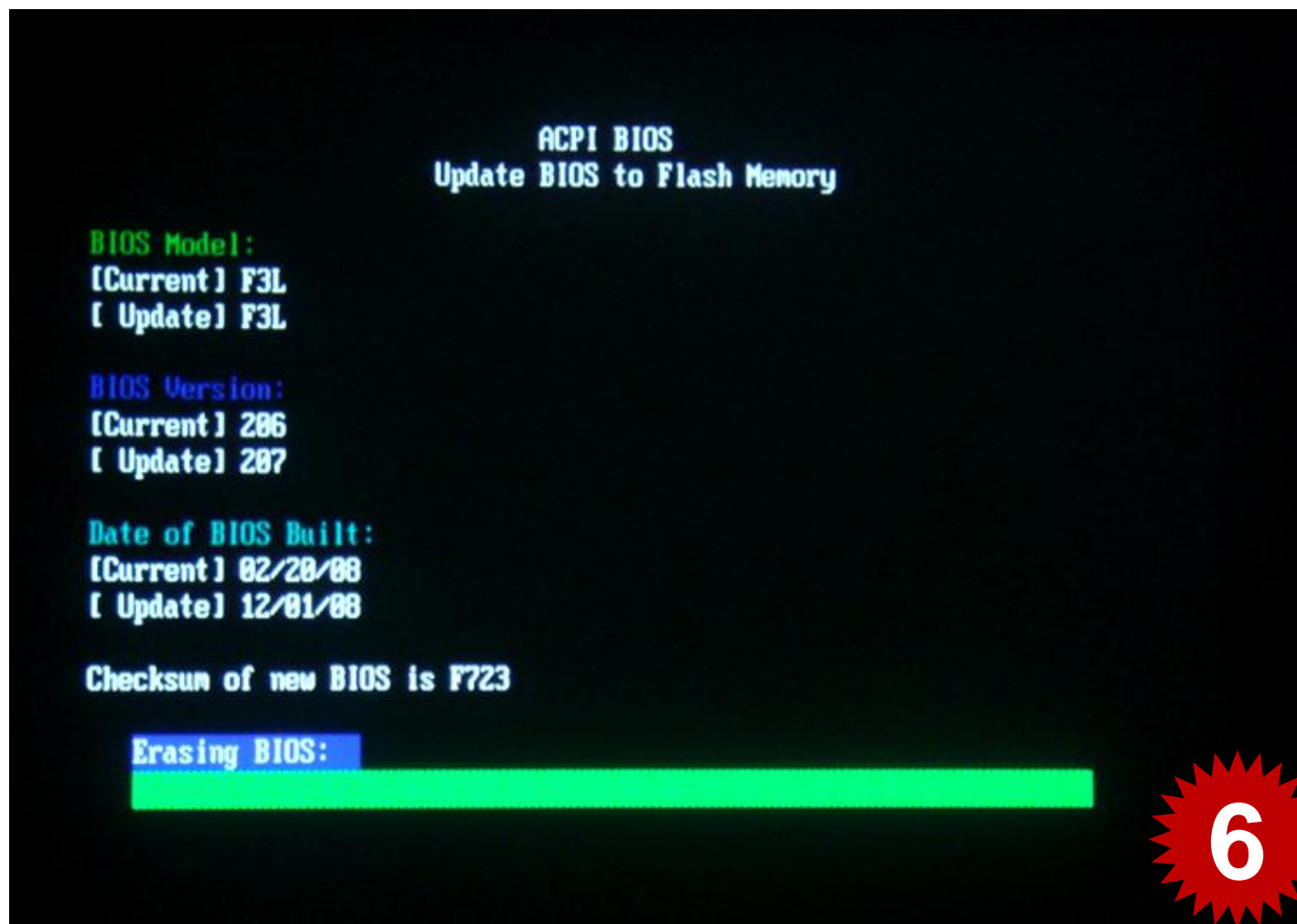
Are your sure to replace BIOS? (Y/N):[ ]
Press <ESC> to Exit
```





Flashing BIOS in FREEDOS

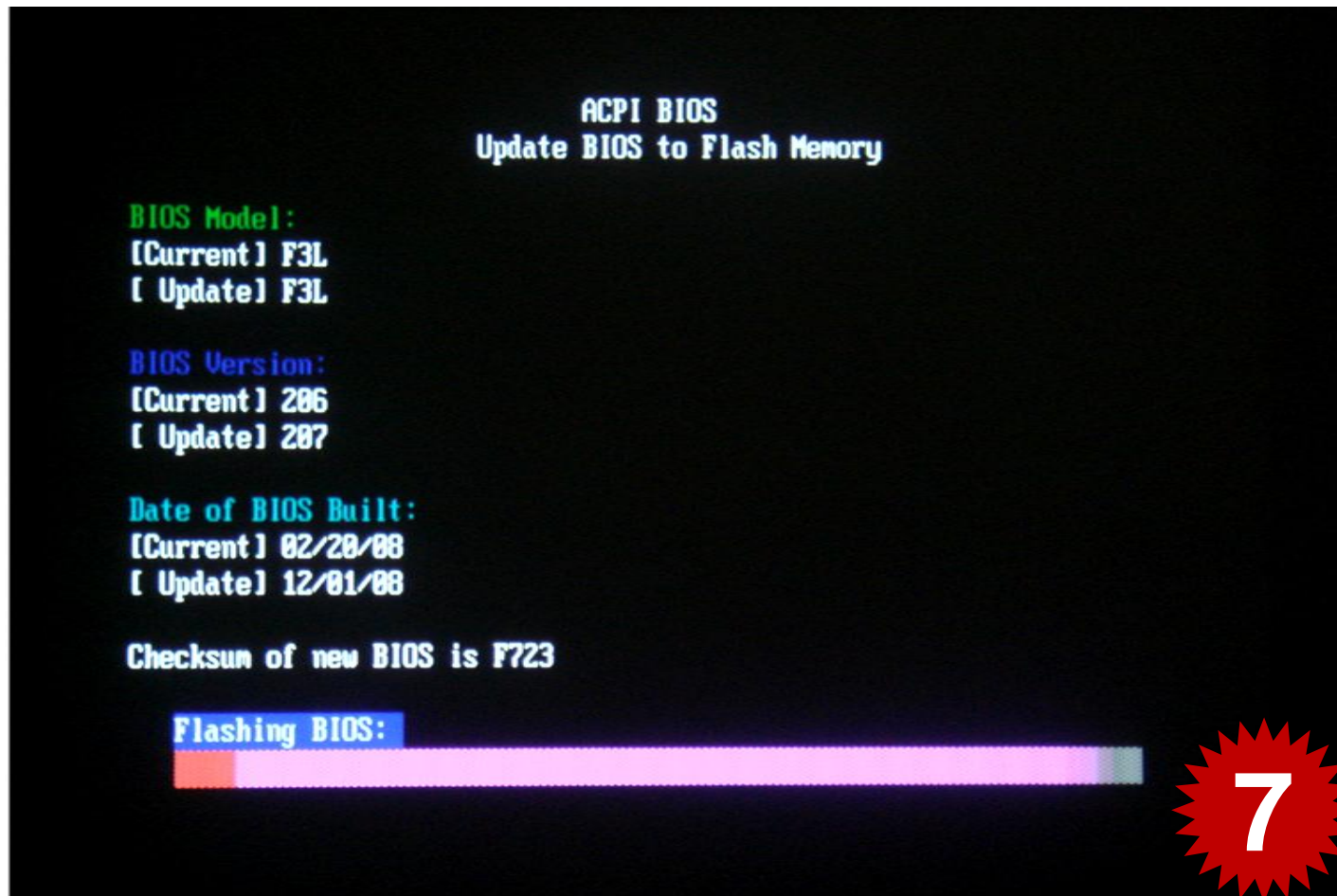
6. Erasing BIOS





Flashing BIOS in FREEDOS

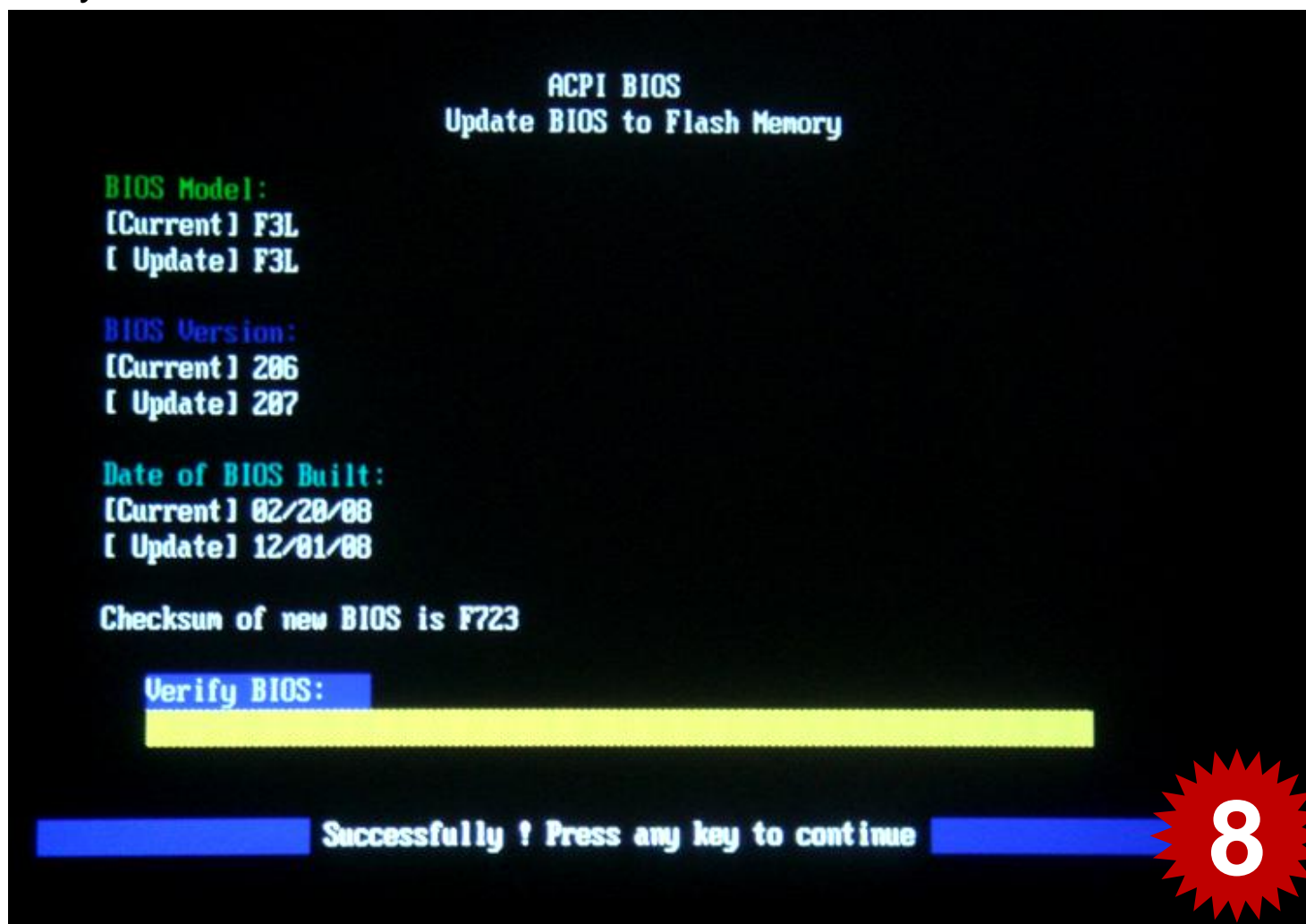
7. Flashing BIOS





Flashing BIOS in FREEDOS

8. Verify BIOS





Flashing BIOS in FREEDOS

9. Complete Flashing and EXIT

```
ACPI BIOS
Flash Memory Write V3.00

Flash Memory : Winbond W25X00

Current BIOS Model : X71A
BIOS Version       : 202.000
BIOS Built Date    : 07/21/08

Choose one of the followings :

1.Save current BIOS to file
2.Update BIOS to flash Memory

Enter choice [ ]

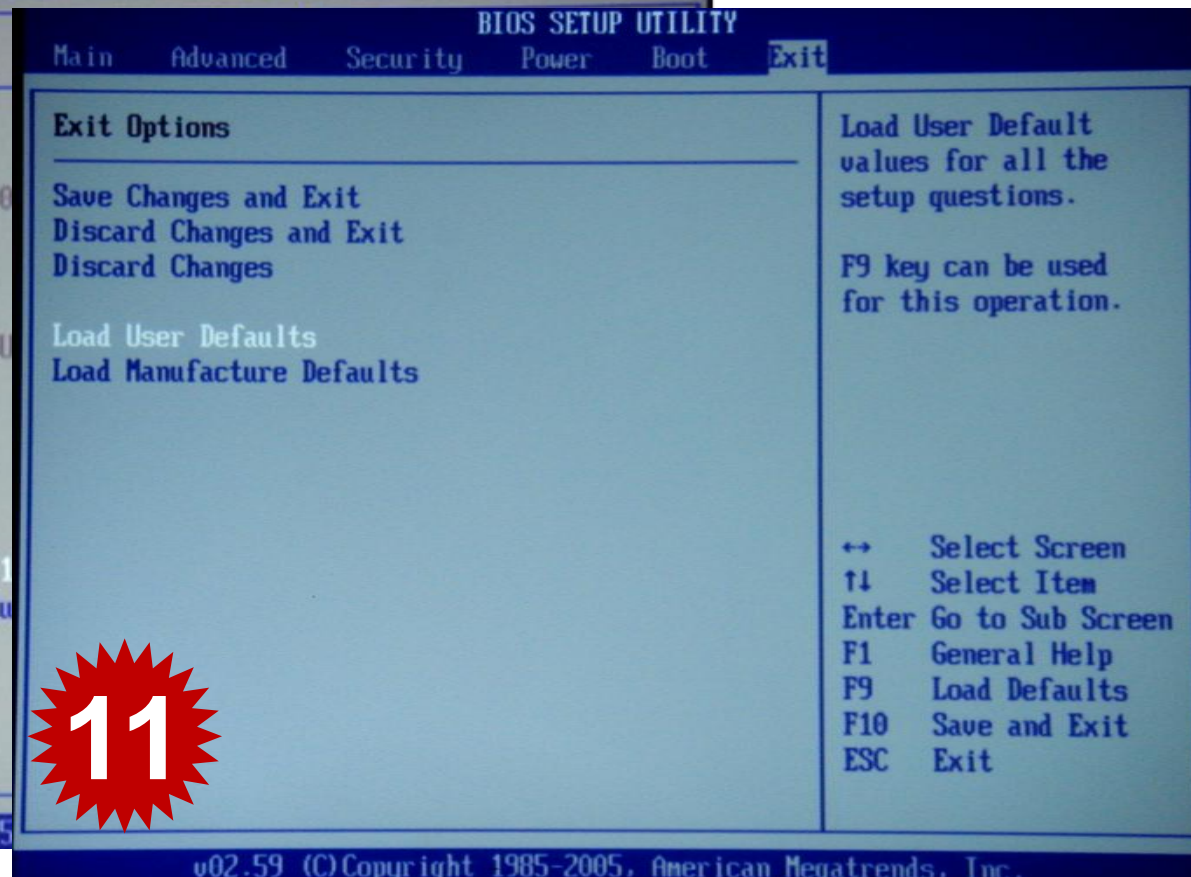
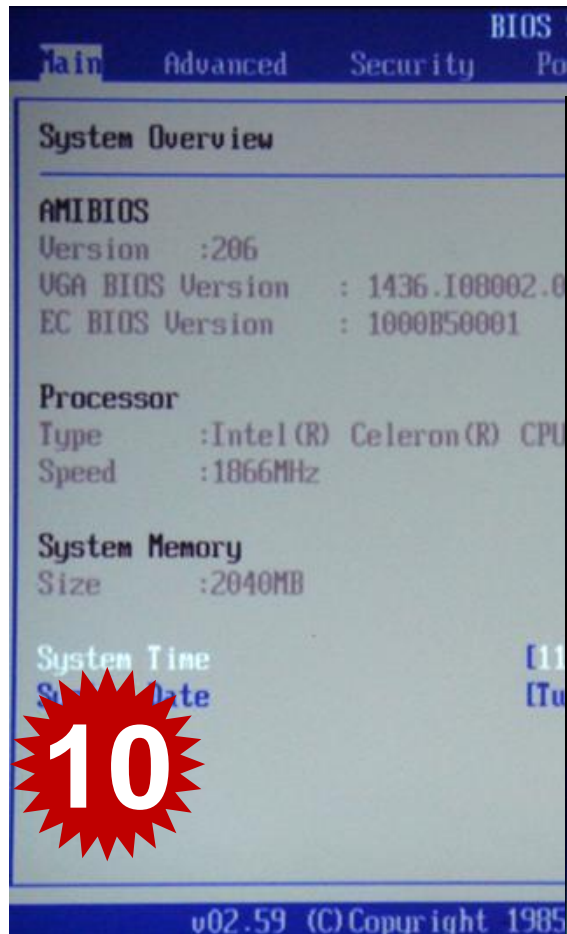
Press <ESC> to Exit
```





Flashing BIOS in FREEDOS

10. Restart the PC and enter into the BIOS SETUP UTILITY to check the BIOS info.





Flashing BIOS in BIOS SETUP UTILITY

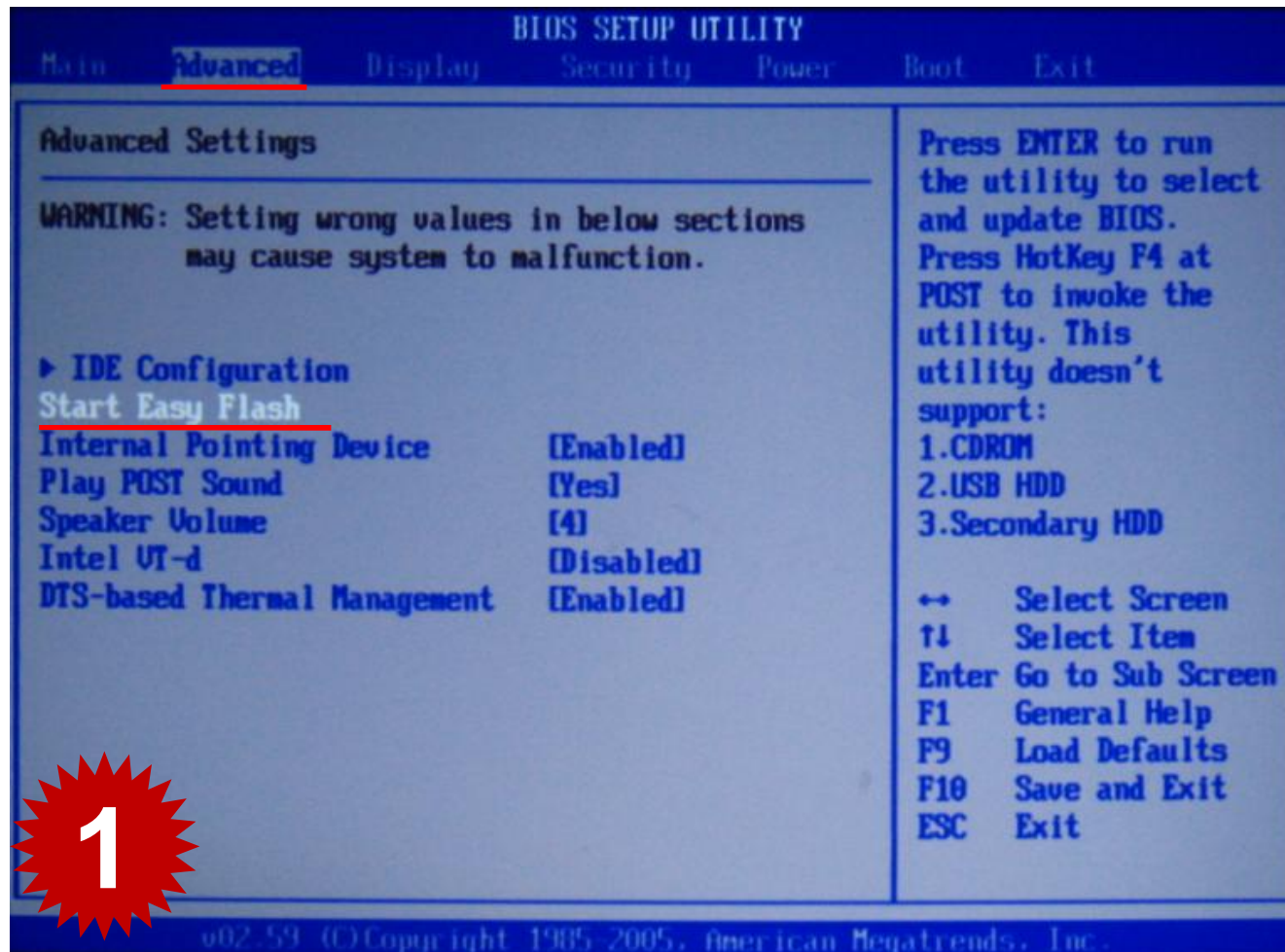
Description:

For the computer with the **Napa** platform and the latter one, BIOS updating could be completed directly in the BIOS setup interface.



Flashing BIOS in BIOS SET UTILITY

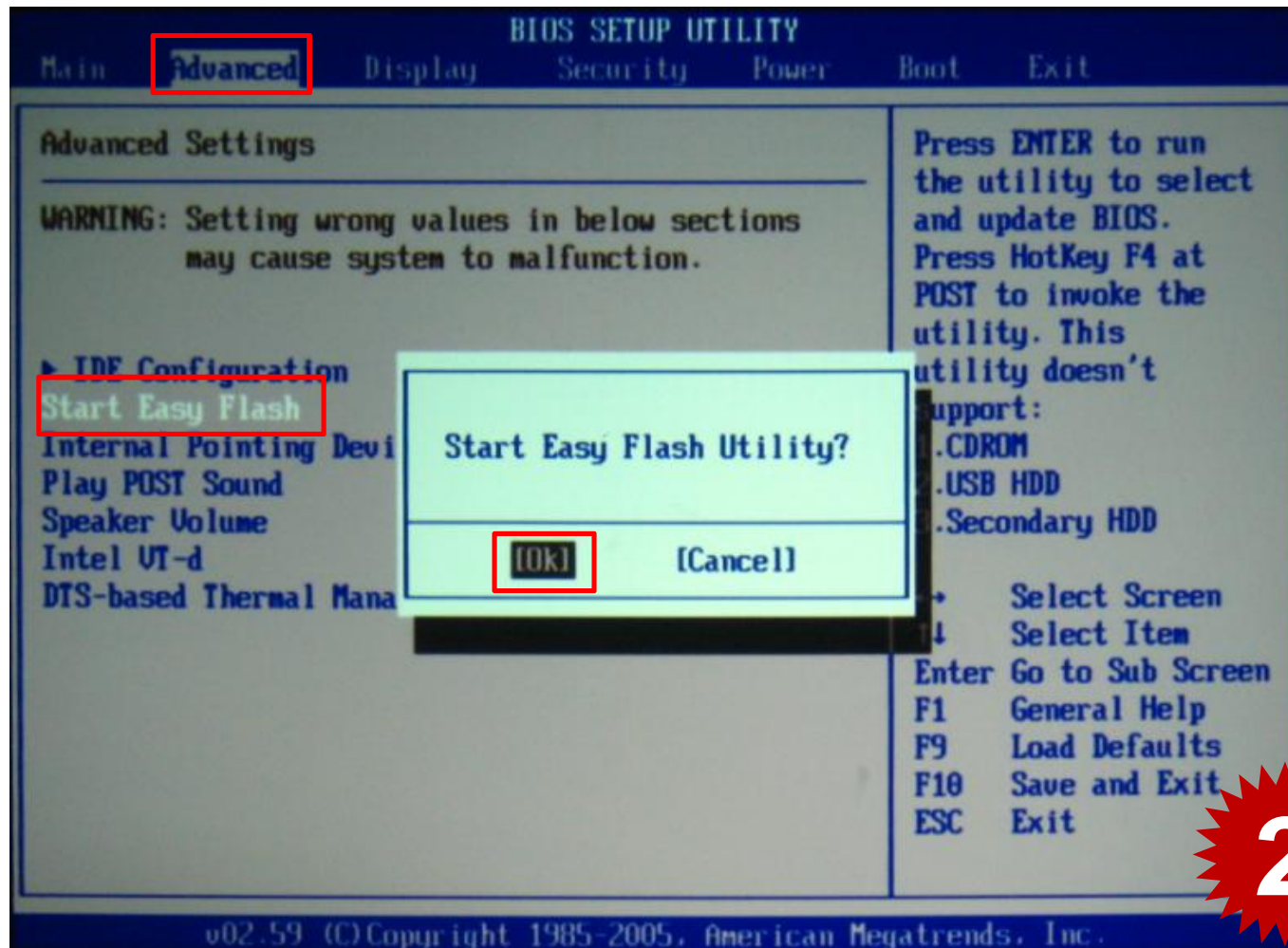
1. Press F2 to enter the BIOS SETUP Interface to start the flashing.
The procedure is as below:





Flashing BIOS in BIOS SET UTILITY

2. Start to Easy Flash

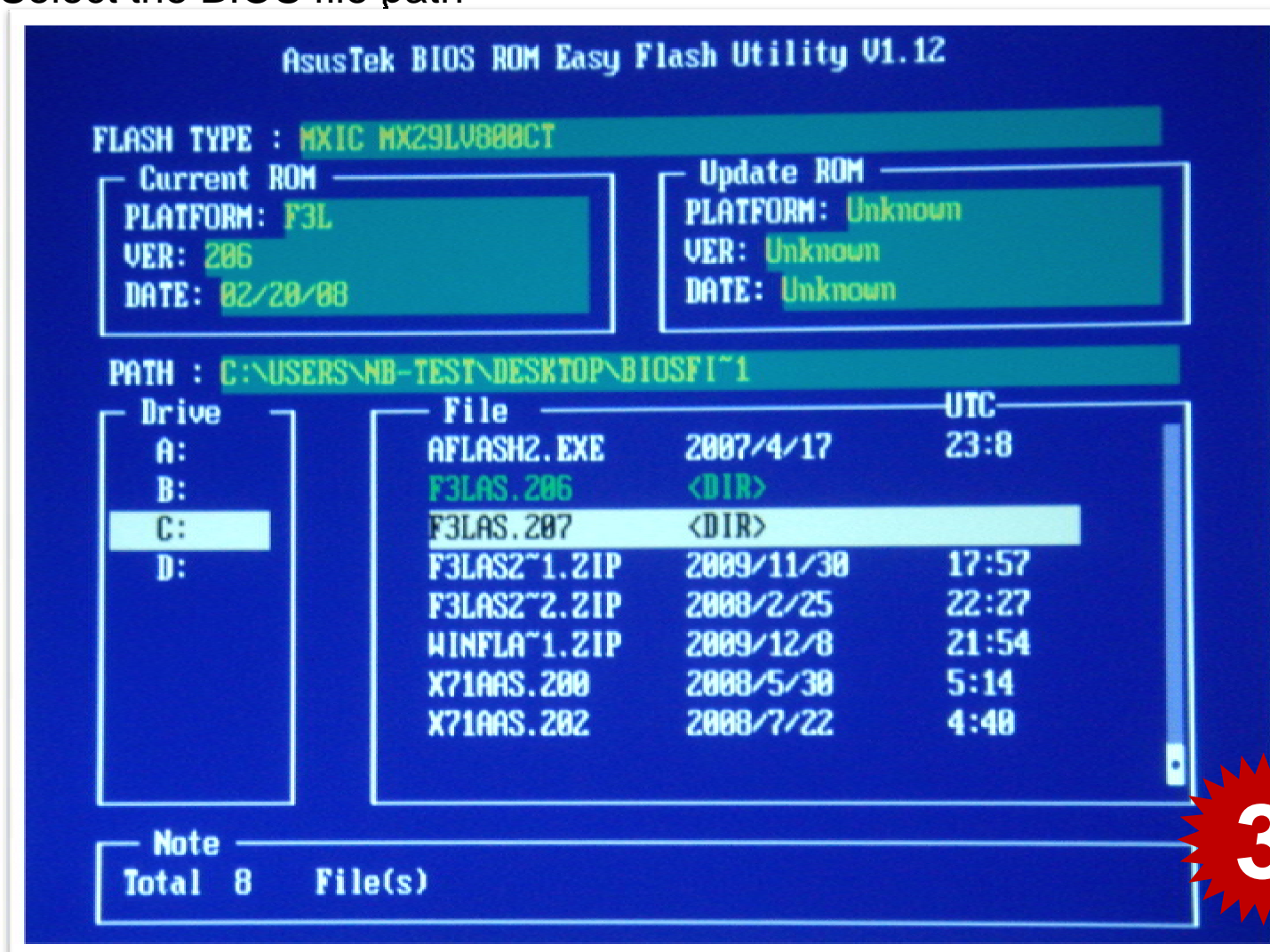


2



Flashing BIOS in BIOS SET UTILITY

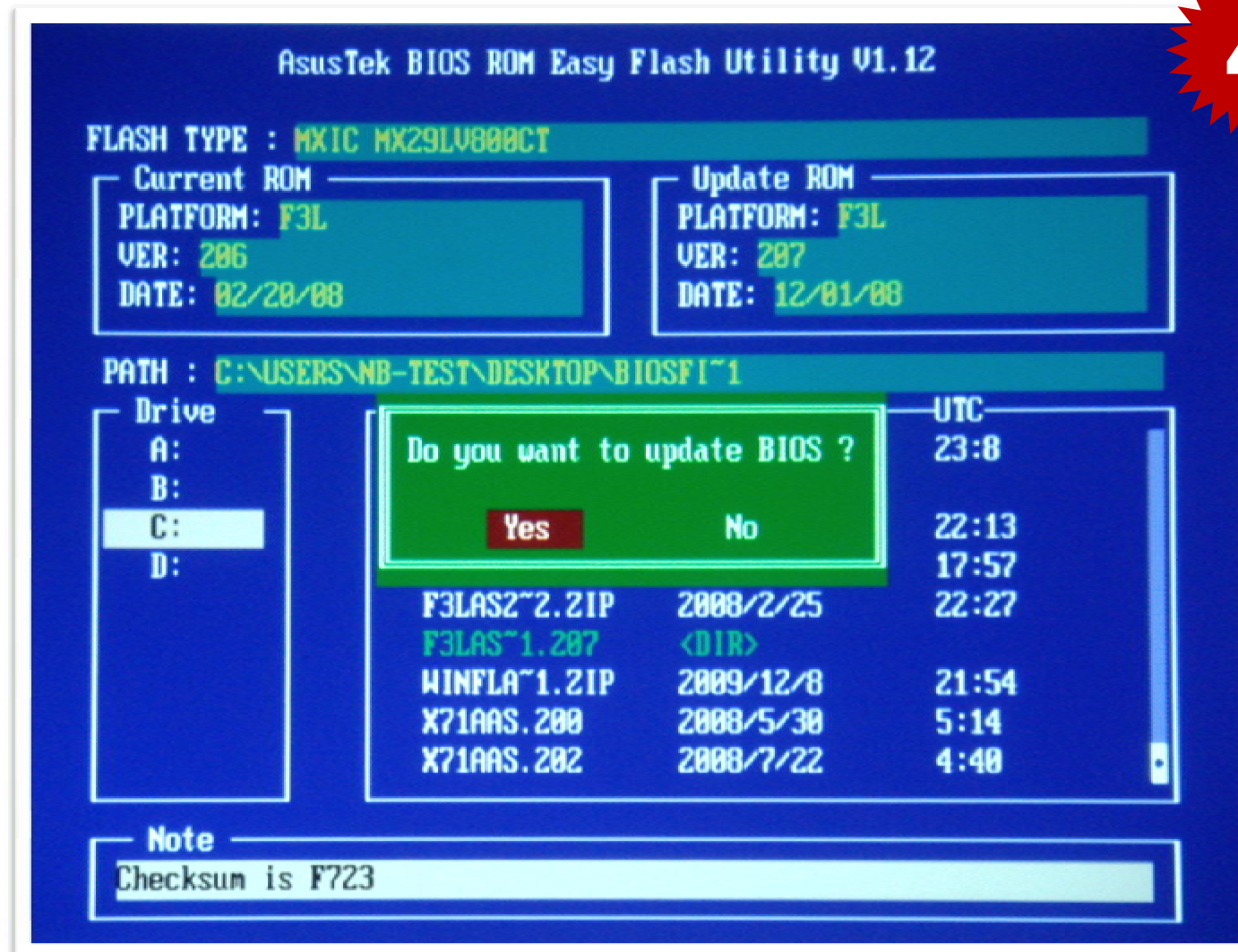
3. Select the BIOS file path





Flashing BIOS in BIOS SET UTILITY

3. Confirm to update BIOS

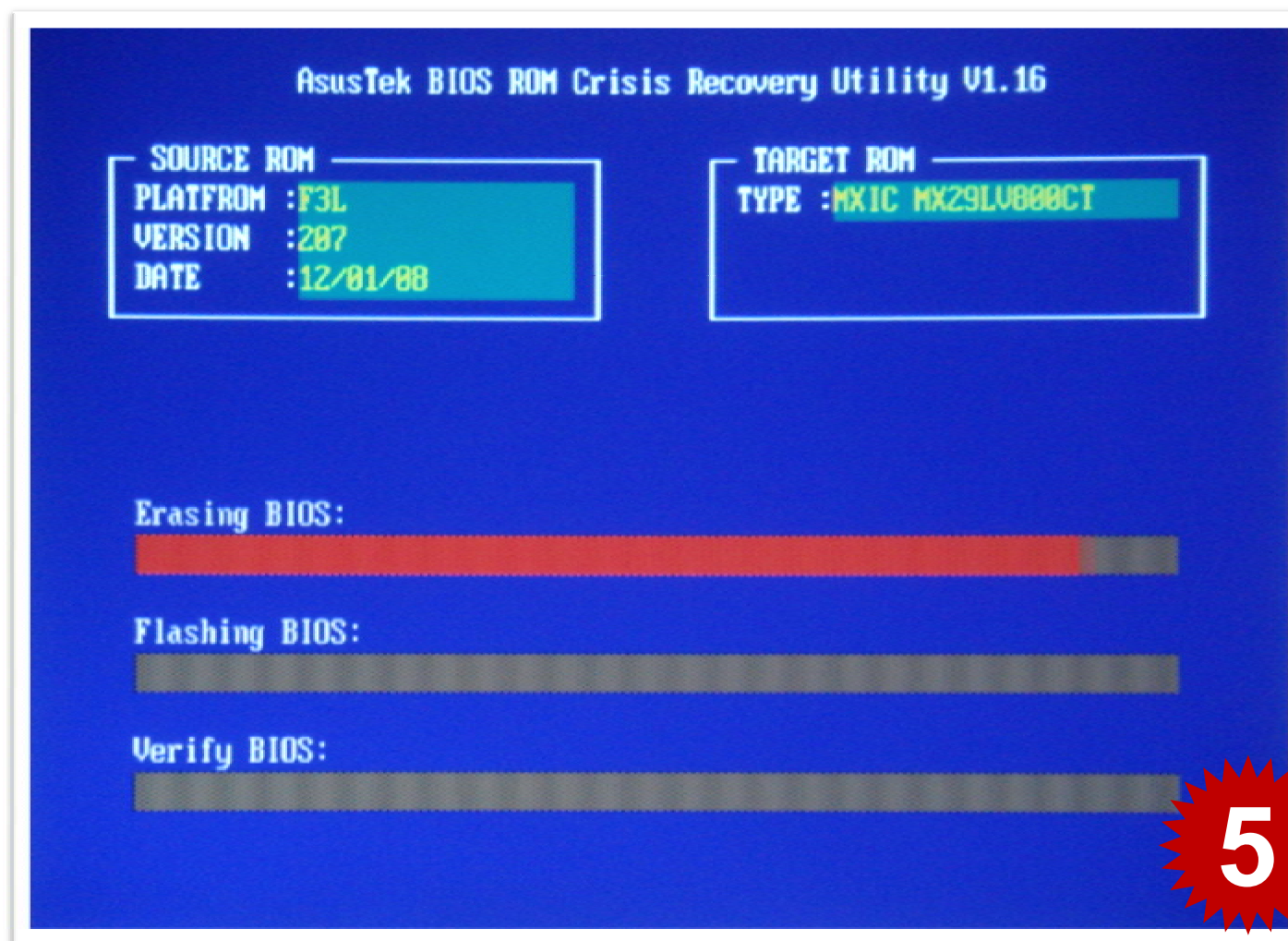


4



Flashing BIOS in BIOS SET UTILITY

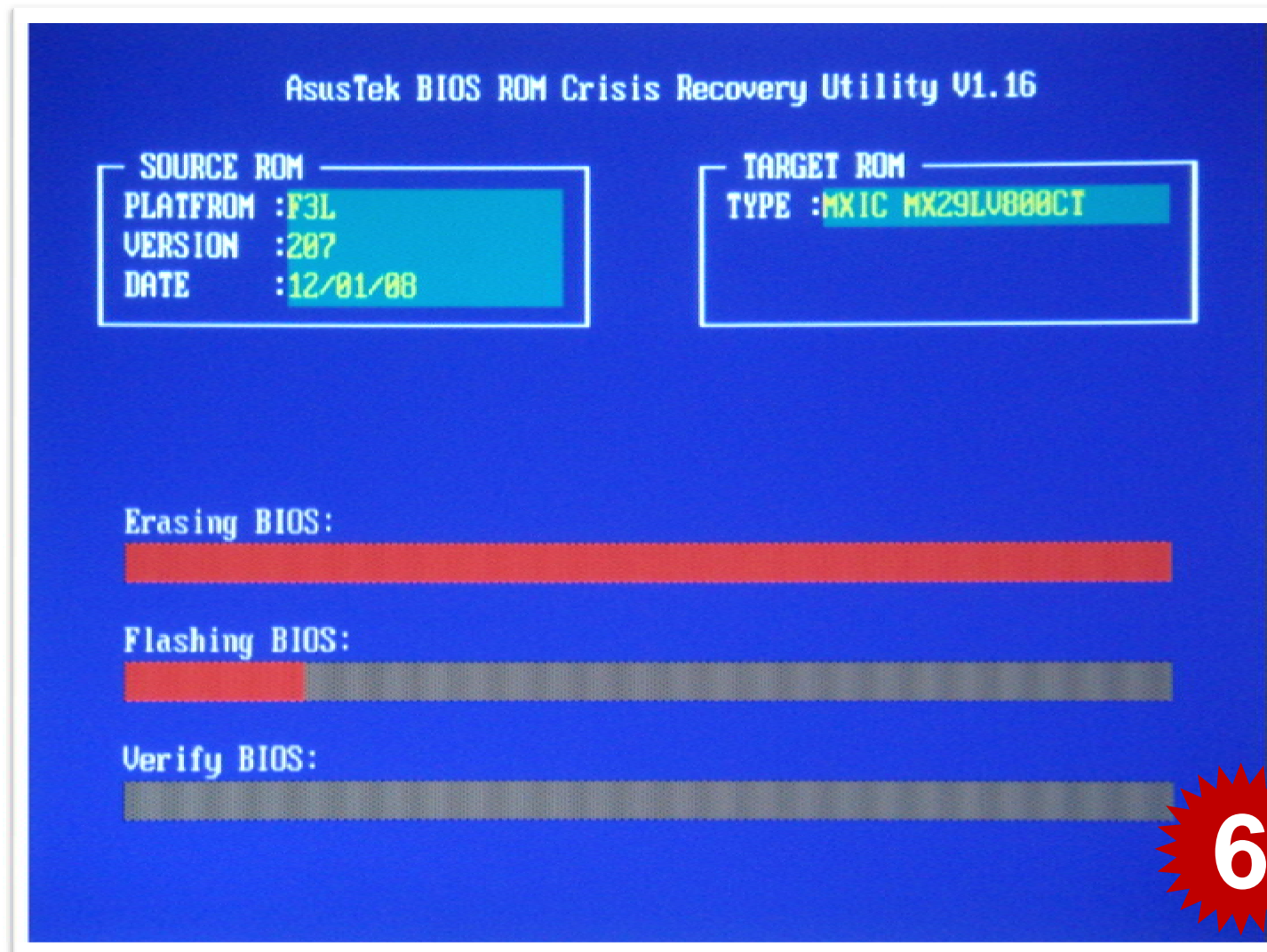
4. Erasing BIOS





Flashing BIOS in BIOS SET UTILITY

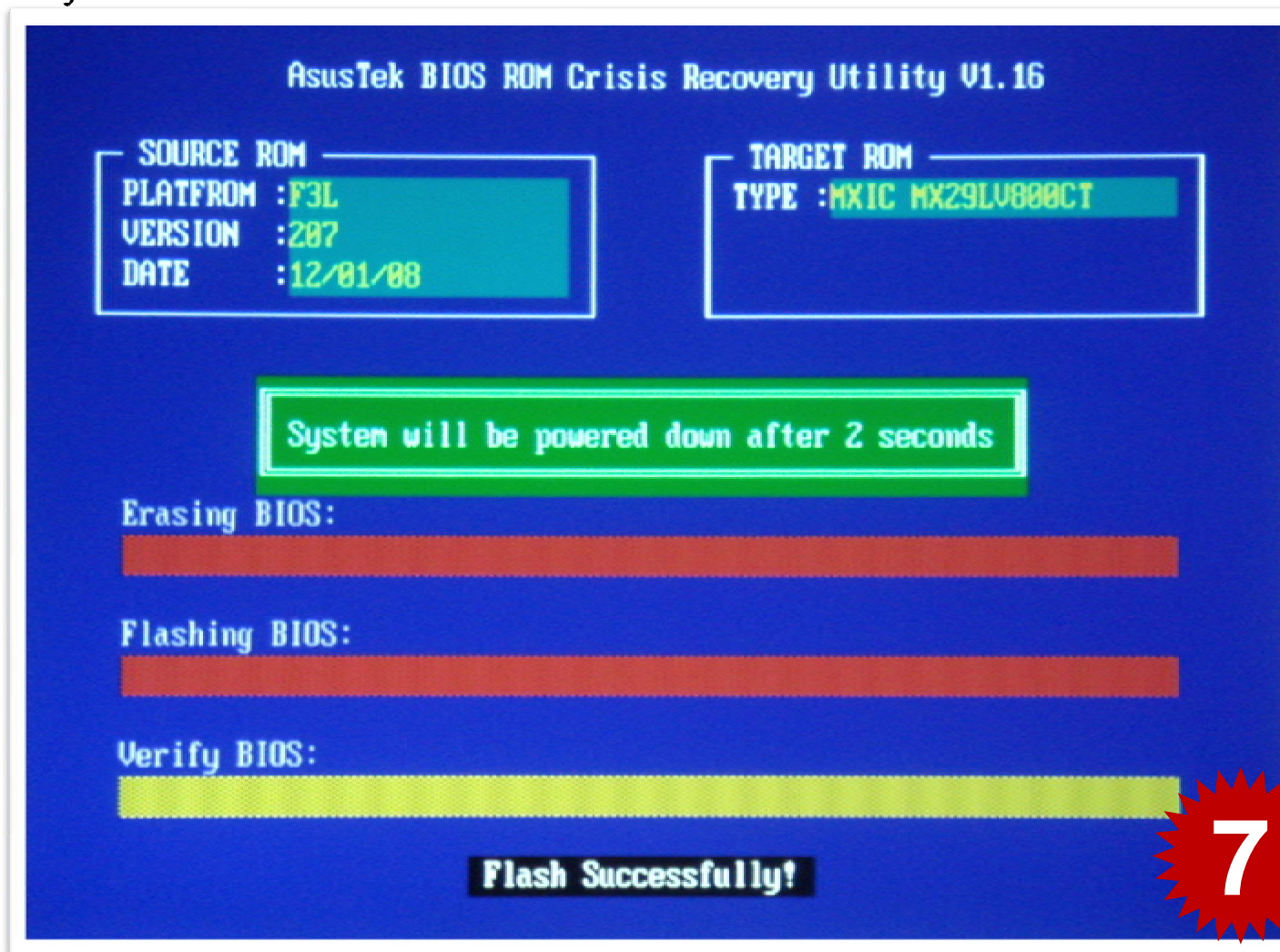
5. Flashing BIOS





Flashing BIOS in BIOS SET UTILITY

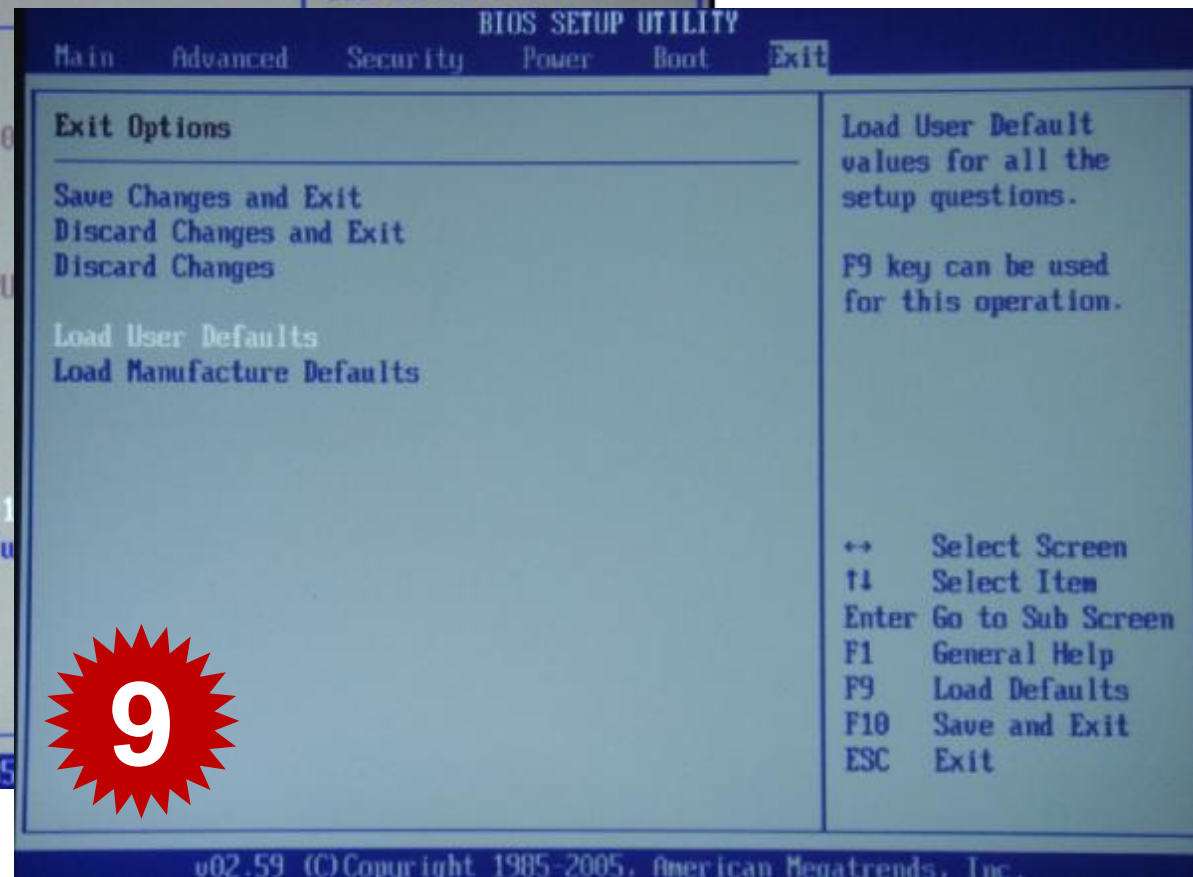
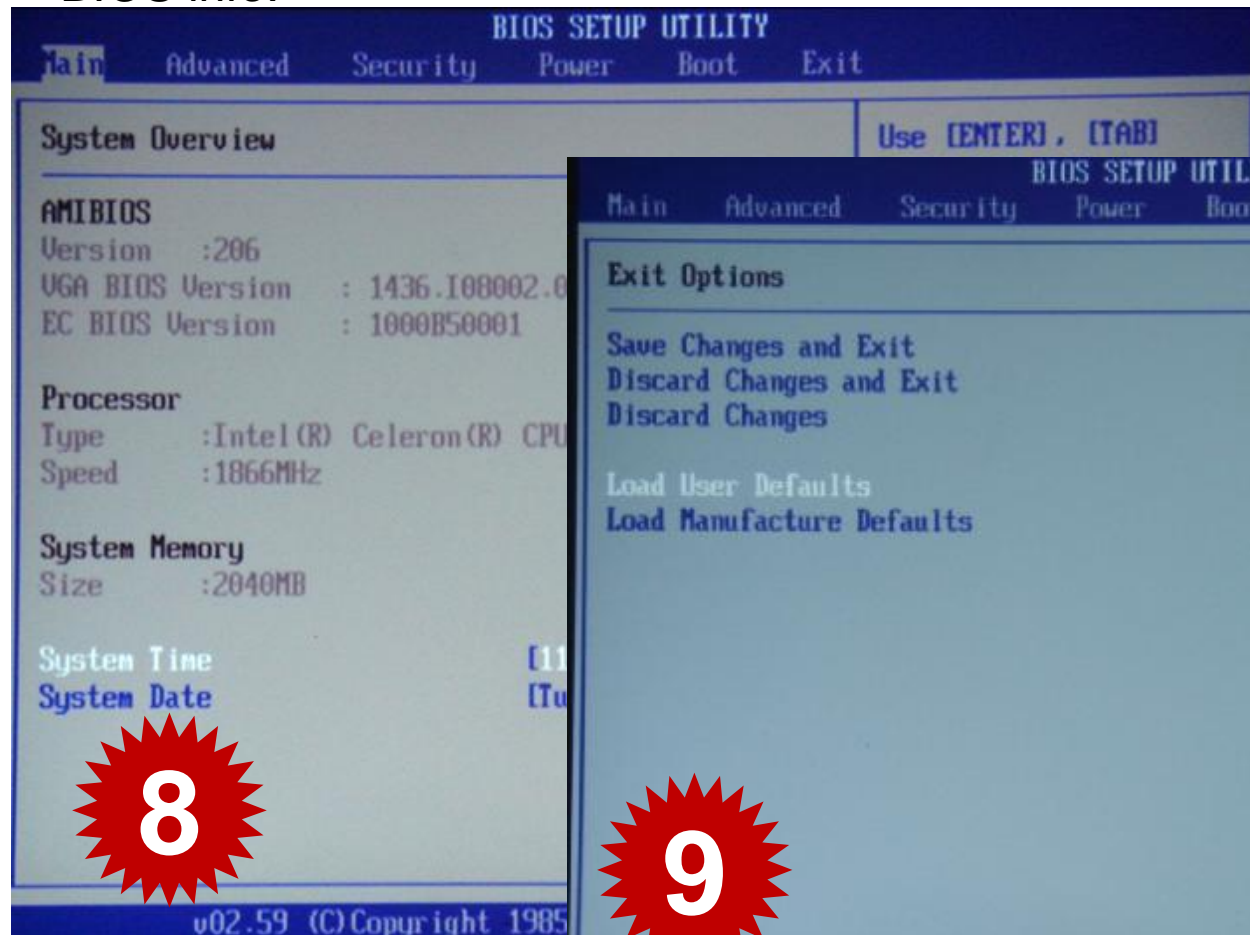
6. Verify BIOS





Flashing BIOS in BIOS SET UTILITY

- Restart the PC and enter into the BIOS SETUP UTILITY to check the BIOS info.











Flashing BIOS by Jig Board

Description:

This is a tool for flashing BIOS. The other three ways introduced before is for the software. In the case of failure flashing BIOS by software, which would cause no boot, the BIOS could be flashed by another tool – JIG BOARD.

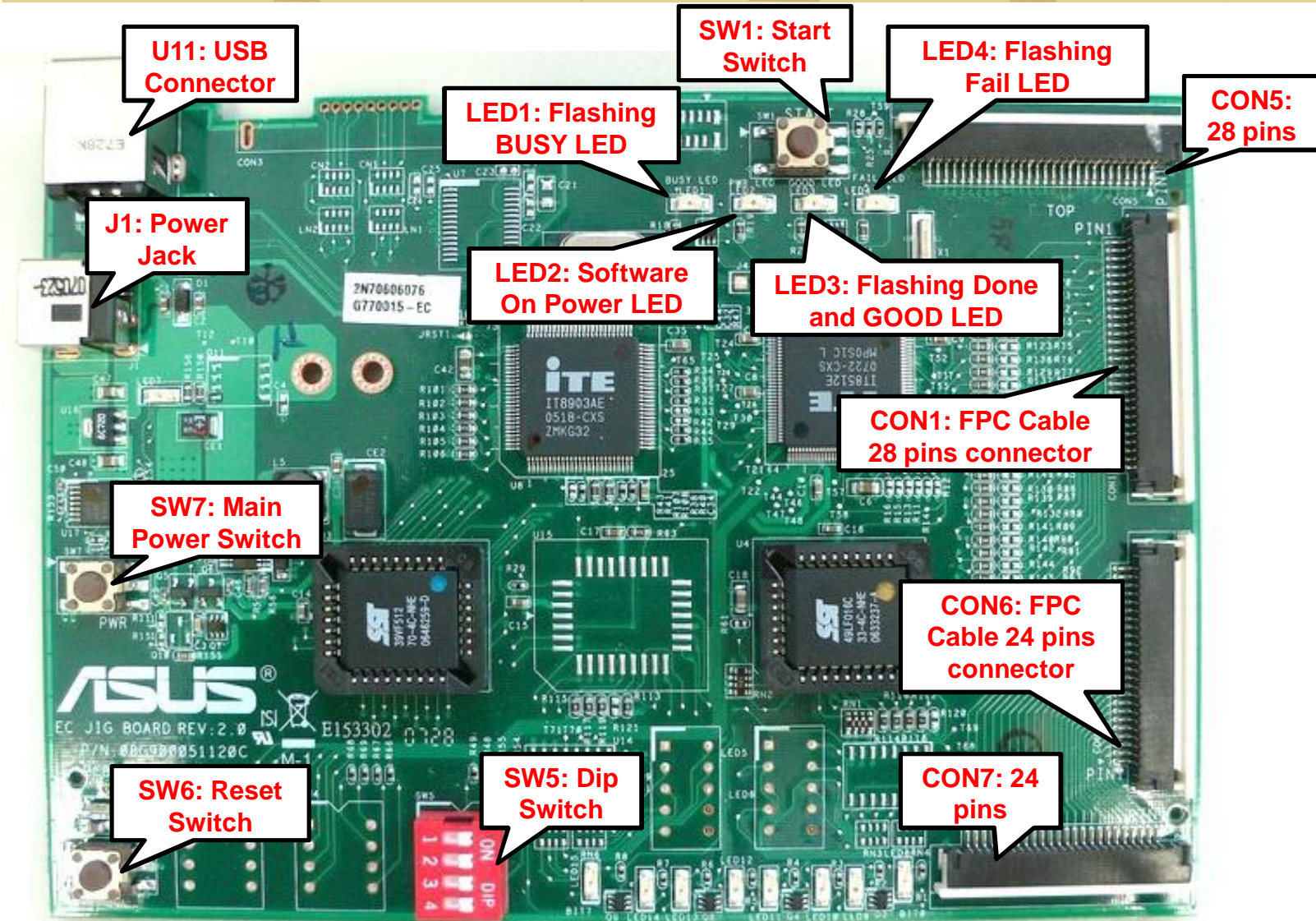


Jig Board Introduction

Part Number	Fixture Name	Amount	Photo
60-2N70606073	Jig Board	1	
14G000505705	USB Cable	1	
14G122300240	FPC Cable(28 pin)	1	
14G122300280	FPC Cable(24 pin)	1	
04-266003160	NB Adapter (65W)	1	
14-110060370	Power Cord	1	



Overview





Notebook Supported

The JIG Board only supports the notebook PC whose BIOS chip is ITE.

A	C	F	G	R	T	V	W	U	X	Z
A3AC	C90S	F3SA	G1S	R1E	T12EG	VX2S	W2S	U1F	X51R	Z37E
A3FC		F3SC	G2S	R1F	T12FG	V2JE	W7S			Z84J
A3FP		F3SV	G2P		T12FF		W7E			Z96S
A3H		F3SE			T12FH		W1JB			Z62F
A3HF		F9DC			T12FV					Z62FP
A6F		F9E			T12H					Z62FM
A6RP		F9S			T12J					Z62J
A6HF		F2F			T12J3					Z62JM
A7C		F2HF			T12JG					Z84F
A7CD		F2J			T12RG					Z84FM
A7J		F2JE			T12RV					Z91FR
A7F		F3F			TRSA					Z94RP
A7P		F3H			T11F					Z96F
A7S		F3P			T11J					Z96FM
A8E		F3JA			T11JA					Z96H
A8S		F3JC			T11JB					Z96HM
A8SC		F3JP			T11JL					Z96J
A9RP		F3JR			T12RV					Z96JM
		F3JM			T12MG					Z96JP
		F3JV			T12MV					Z96JS
		F3M			T12UV					
		F3T			T13FG					
		F3TC			T13FV					
		F3U			T13MV					
		F5R			T19F					
		F5M			T19H					
		F9F			T19R					
		F9J								



Flashing BIOS with JIG Board

Load ROM files to the JIG Board

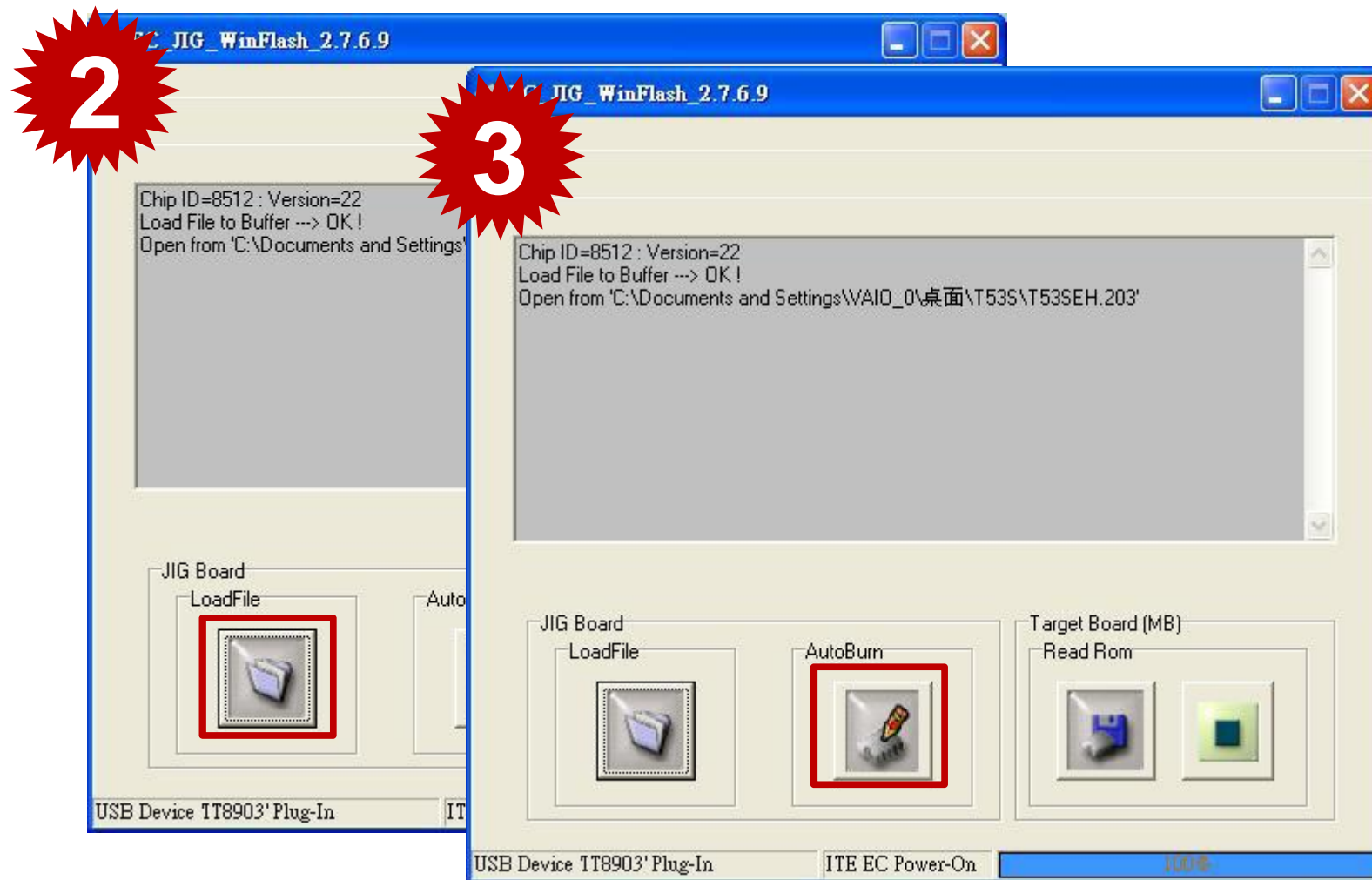
1. Use USB cable to connect the JIG Board with the target board. Then plug in the DC Power to JIG Board.(12~19V, notebook power adapter). Press the power button to turn on the board.





Flashing BIOS with JIG Board

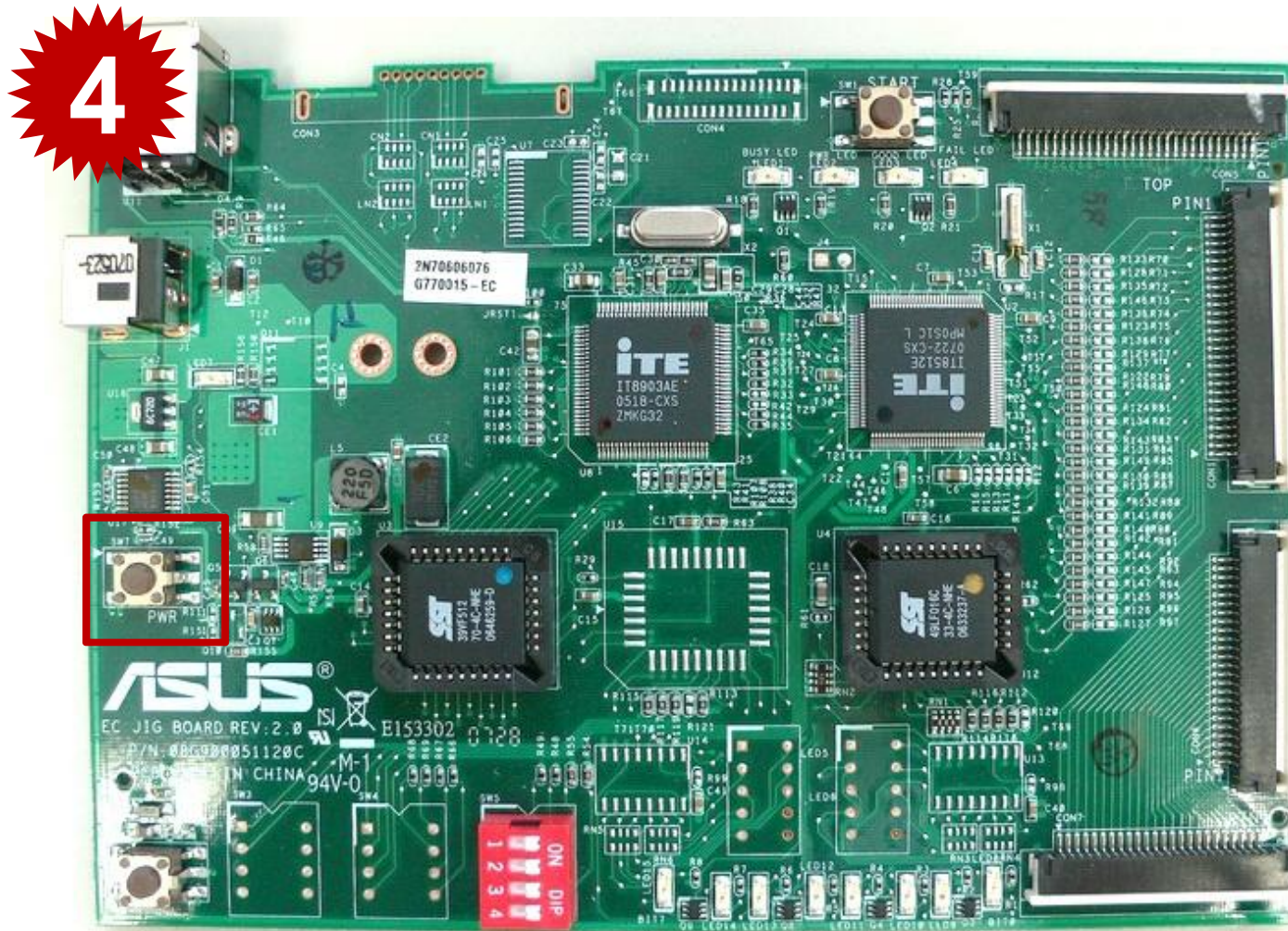
2. Press LoadFile icon to load BIOS ROM file and press AutoBurn icon to burn BIOS ROM file to JIG Board.





Flashing BIOS with JIG Board

3. After burning done, press SW7 again to turn off main power.





Flashing BIOS with JIG Board

Upload the ROM file to the target notebook

1. Remove the battery of the target notebook

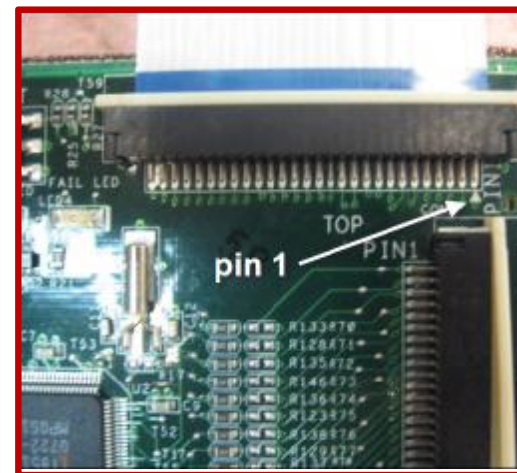
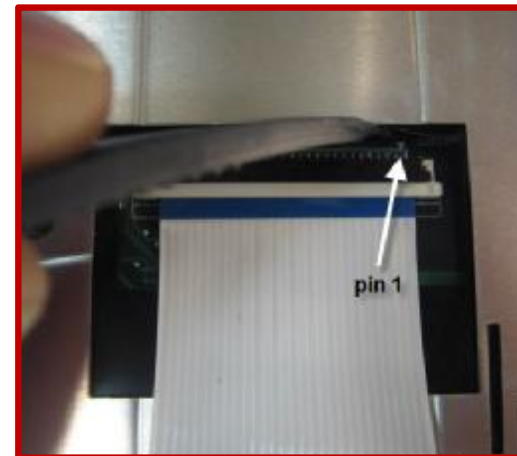
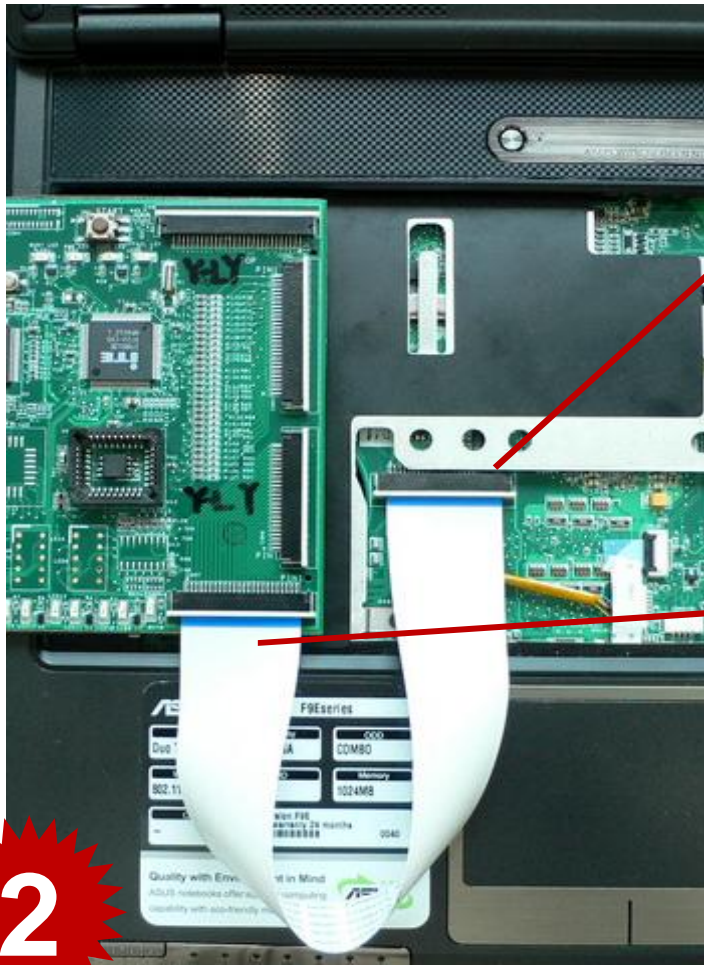


1



Flashing BIOS with JIG Board

2. Connect the FPC cable between to the keyboard and Jig-Board connector.(connect both side on pin 1)

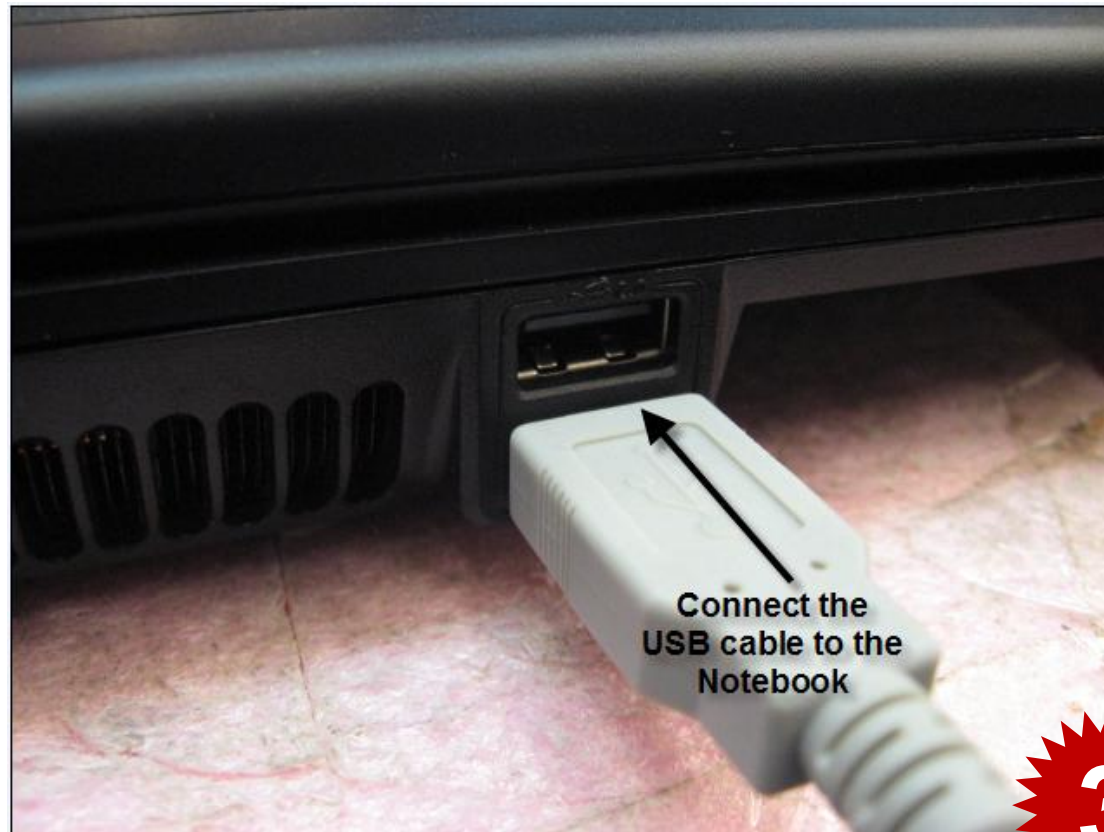


2



Flashing BIOS with JIG Board

3. Connect the USB cable on the Jig-Board and notebook.

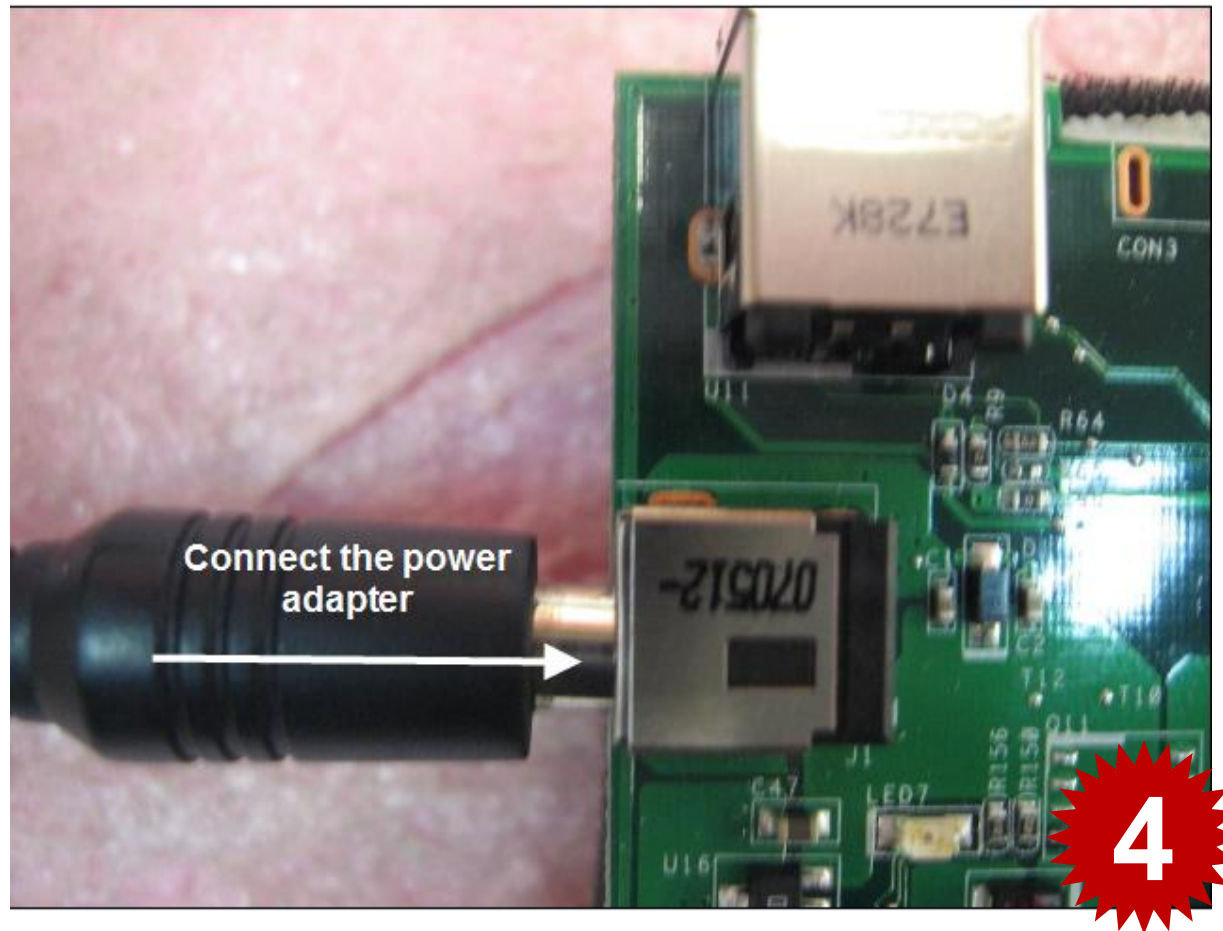


3



Flashing BIOS with JIG Board

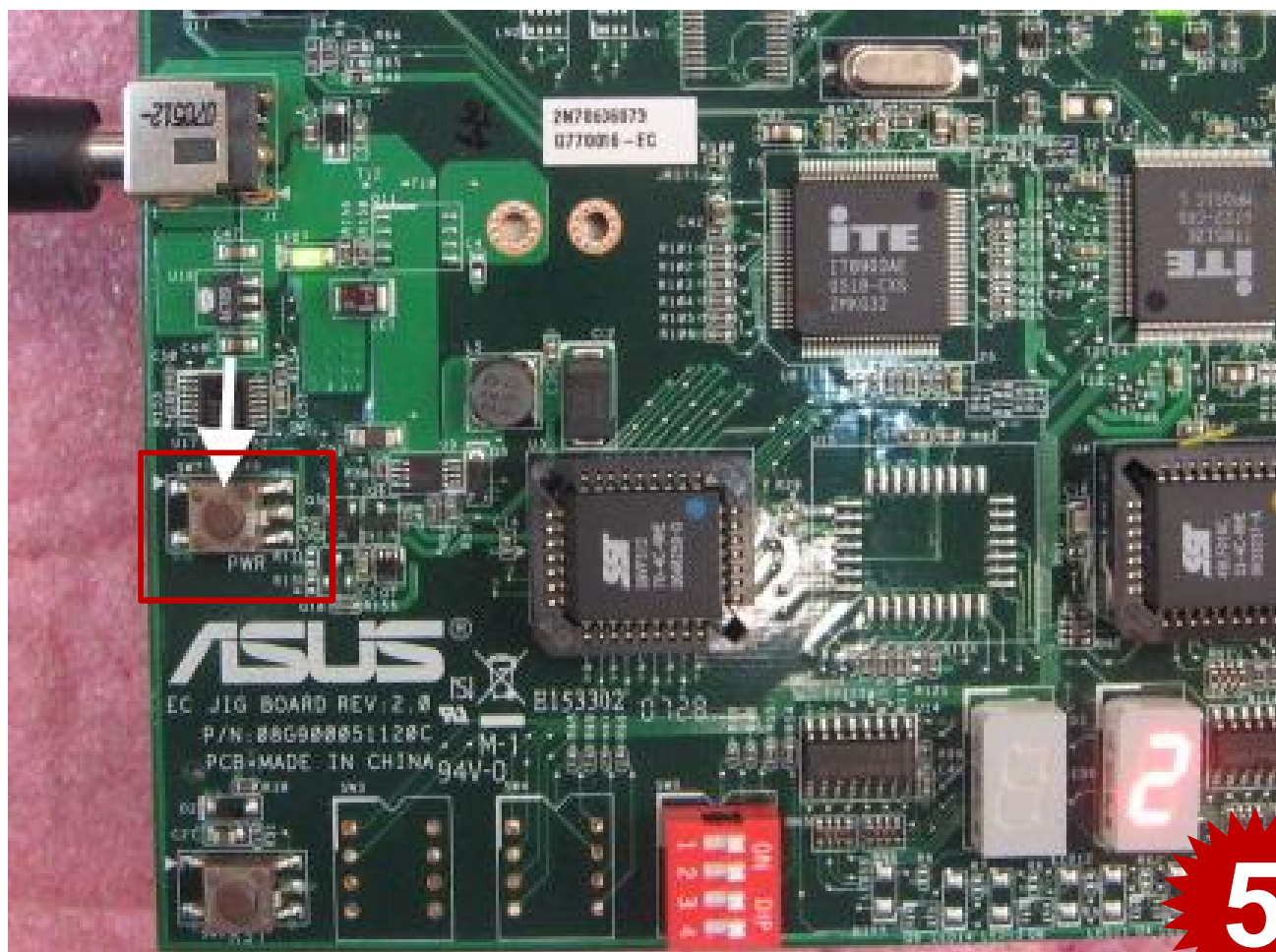
4. Connect the power adapter on the Jig-Board.





Flashing BIOS with JIG Board

5. Turn the Jig-Board on by pressing the power button.

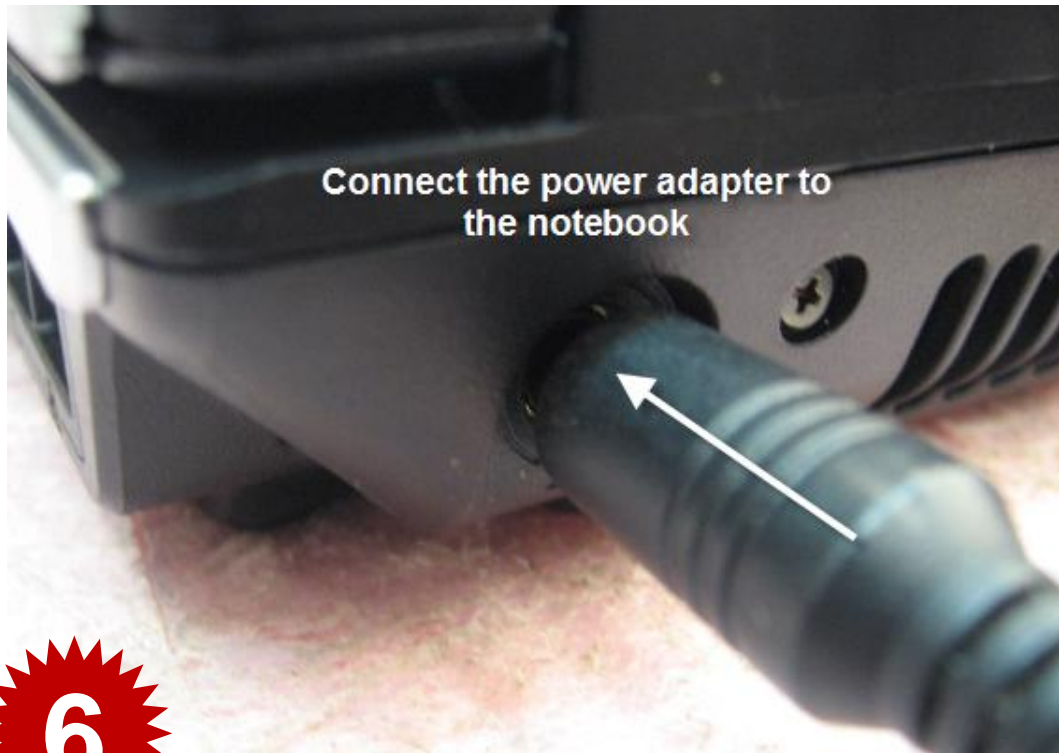


5



Flashing BIOS with JIG Board

6. The finally connection is the power adapter into the notebook.



6

**There is a connecting rule between the Jig-Board, notebook and adapters!!!!
If you don't follow these steps, you can't upload the ROM file.
Because the circuit needs to be closed by the notebook power.**



Flashing BIOS with JIG Board

7. Press on the start button on the Jig-Board.





Message ID List

Message	Process	Note
AA	Wait for check KBS interface	The scenarios will influence by the following conditions: The utility did not detect the KSO9=0 The FPC cable connected to the connector with reverse side. The JIG Board crisis recovery data structure did not match the target keyboard connector define. Target system does not have the power source.
00	Flash erase	
10~1F	Flash Program	For 1M/2M flash
20~2F	Flash Verify	For 1M/2M flash
55	KBS test fail	The scenario will influence by the following conditions: The JIG Board crisis recovery data structure did not match the target keyboard connector define. The target system has other power sources before JIG Board SW6 turn on.
00~FF	Read ROM	For 1M/2M flash
88	Flash successfully	









Chapter 7.1

USB BOOT UP INTRODUCTION



Equipment Description

NO#	Equipment Description	ASUS Part Number	Quantity	Remarks
1	CRT MONITOR	20-520000282	1	
2	ENG_EZUSB BOARD R1.03	80-C218-0103	5	
3	USB CABLE	22-060000050	5	
4	Memory Stick Card	20-T004B1011	1	
5	SCANDISK SD MEMORY CARD	20-TT2600048	1	
6	Test CD	22-060002570	1	

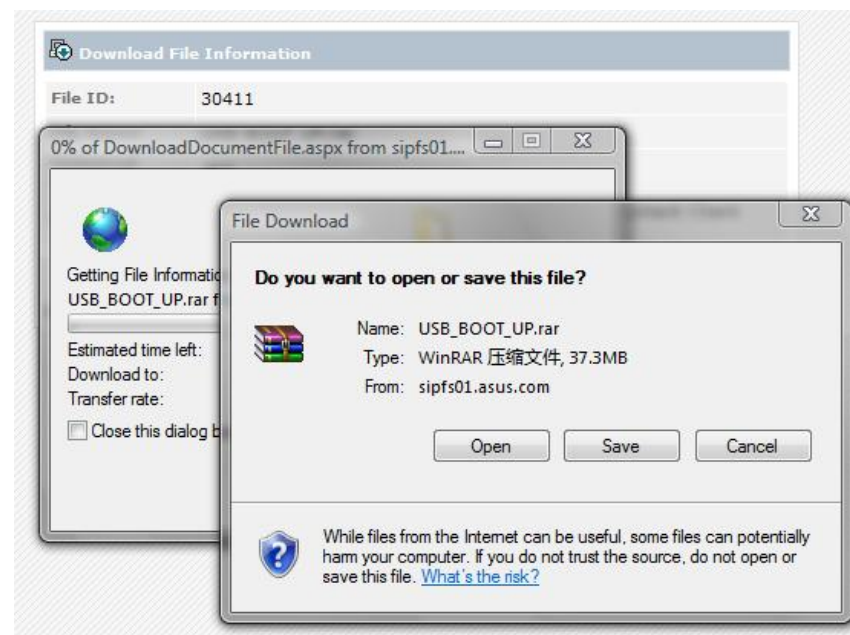
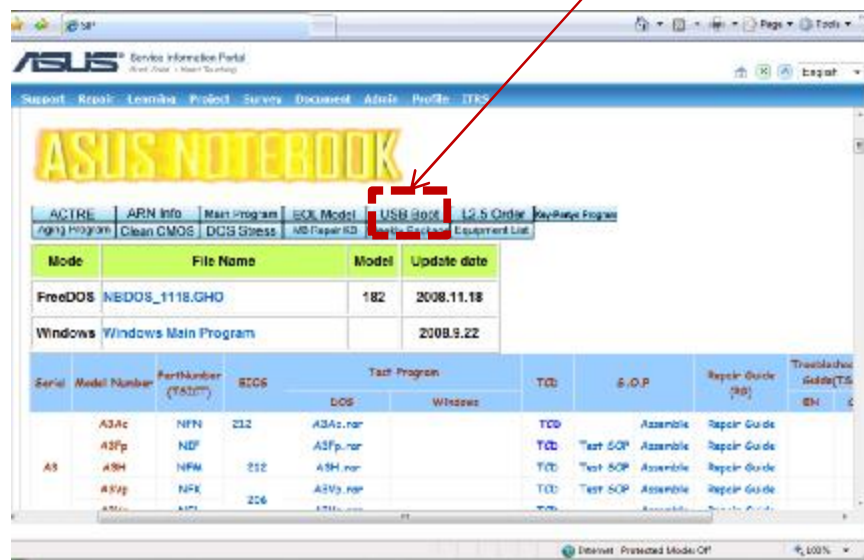


Create USB boot-up DISK

Advantages:

1. Boot directly from AI-flash and run test programs under FreeDOS, DO NOT need unplug HDD.
2. No need using HDD (A substitute method before NDSS online)

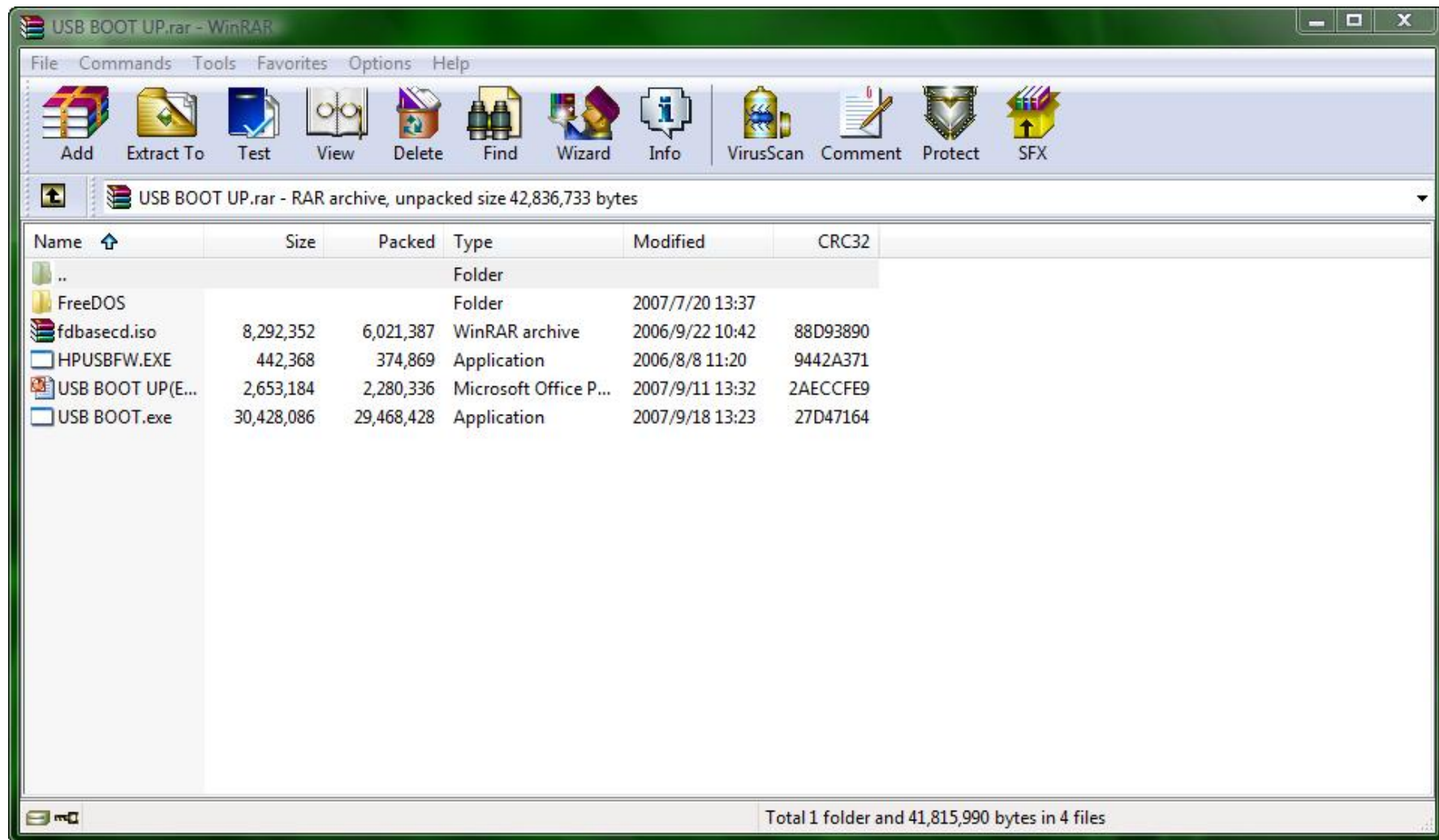
STEP 1: Download "USB Boot" from SIP





Create USB boot-up DISK

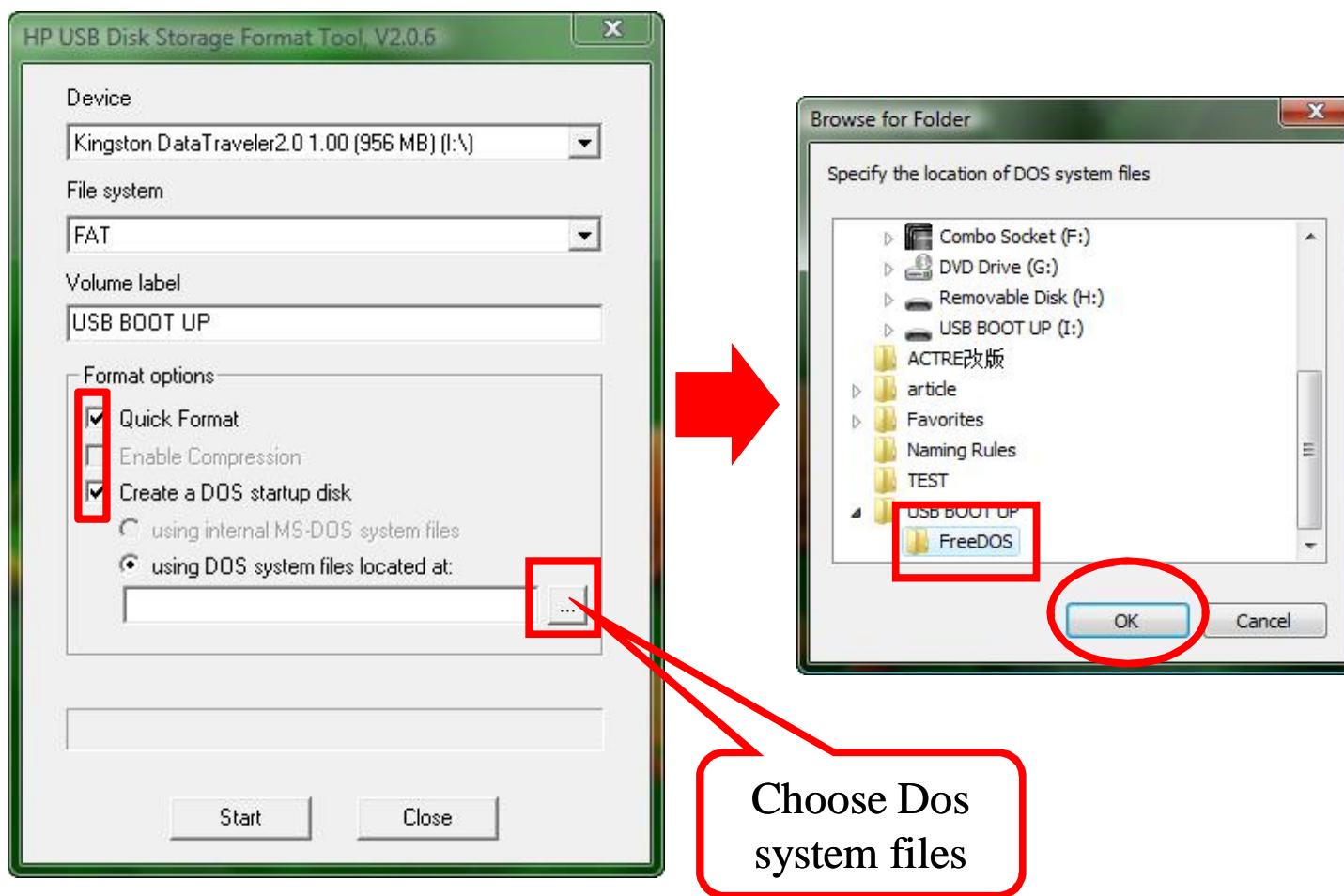
STEP 2: Extract the RAR file to any folder(eg. extract to E:\)





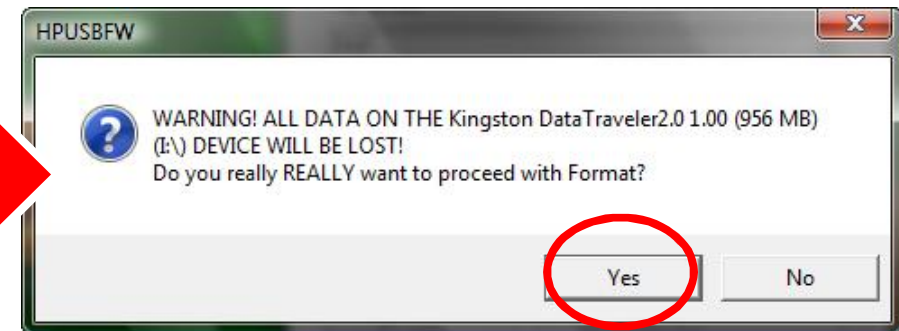
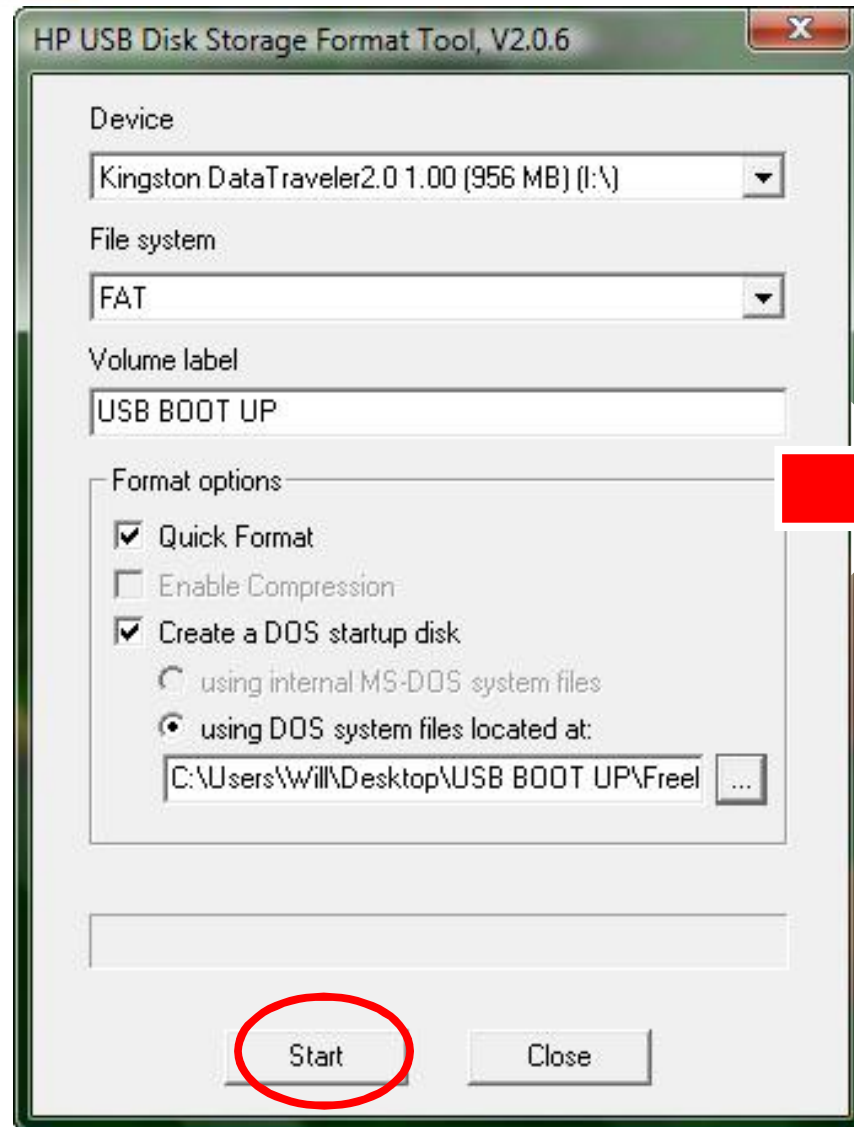
Create USB boot-up DISK

STEP 3: Use **HPUSBFW.EXE to Format AI_FLASH and create a DOS startup disk**





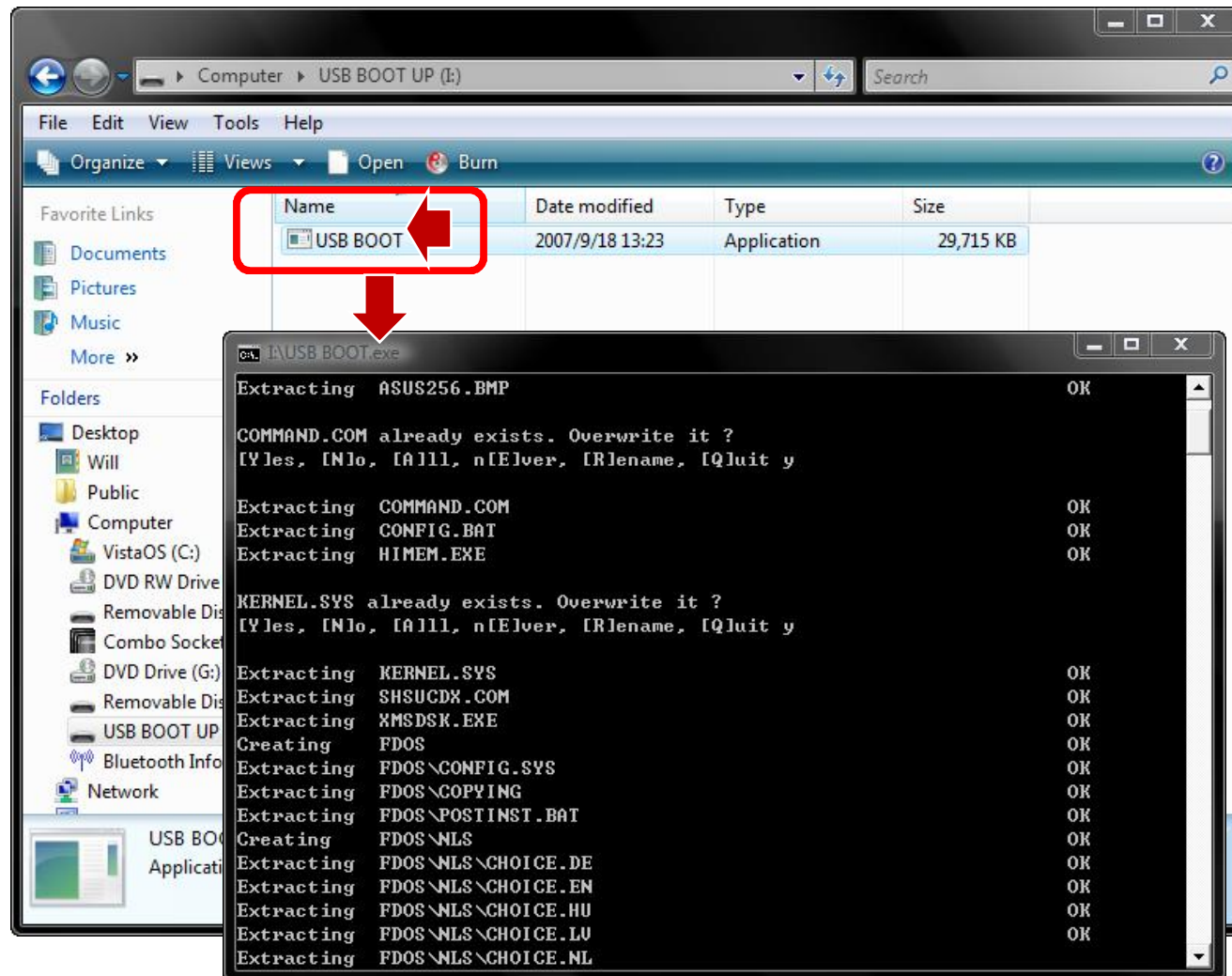
Create USB boot-up DISK





Create USB boot-up DISK

STEP 4: Copy USB_BOOT.EXE to AI_FLASH and double click it





Create USB boot-up DISK

STEP 5: Download Test Program from SIP

ASUS® Service Information Portal
Rock Solid • Heart Touching

Support Repair Learning Project Survey Document Admin Pro

Model	Repair	Learning	Project	Survey	Document	Admin	Pro
G5	G2Sg	NGP			G2Sg.rar		
	G50V			206	G50V.rar		G50
	G50Vt				G50Vt.rar		G50
	G50G						
G7	G71V			206	G71V.rar		
	G70S	NKT		207	G70S.rar		G70
	G70SG			202	G70SG.RAR		G70
	G71G						
L5	L50VN			210	L50VN.RAR		L50
	M51KR	NN9			M51KR.RAR		M51KR(W).RAR
	M51Ta				M51Ta.RAR		M51
	M51TR			207	M51TR.RAR		M51
	M50SA	NLT		204	M50SA.RAR		M50
	M50VM			210	M50VM.RAR		M50
	M50VN				M50Vn.RAR		M50
	M50Sr	NLT			M50Sr.rar		
	M50SV	NED		209	M50SV.RAR		

Download File Information

File ID: 58056
File Name: G70SG.rar
Download Count: 1
Note: If the network is unstable, you may use SIP Document Client instead.

Download From: [Taiwan](#) [Europe](#)

Test SOP Repair Guide

File Download

Do you want to open or save this file?

Name: G70SG.rar
Type: WinRAR archive, 1.72MB
From: sipfs01.asus.com

Open Save Cancel

While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)

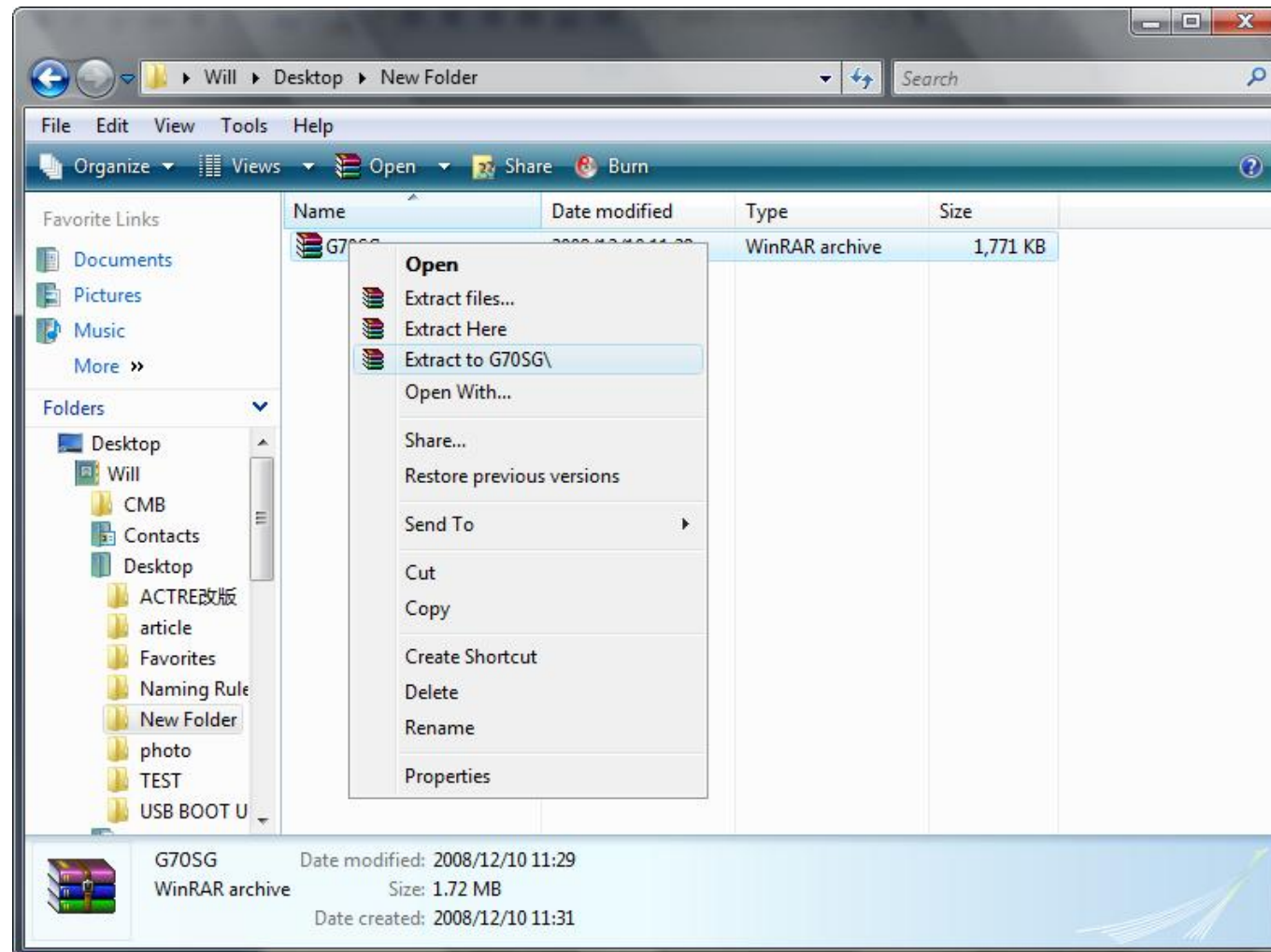
Webmaster Mail box

All contents are Copyright © 1992-2004 AsusTek Computer Inc. All rights reserved.



Create USB boot-up DISK

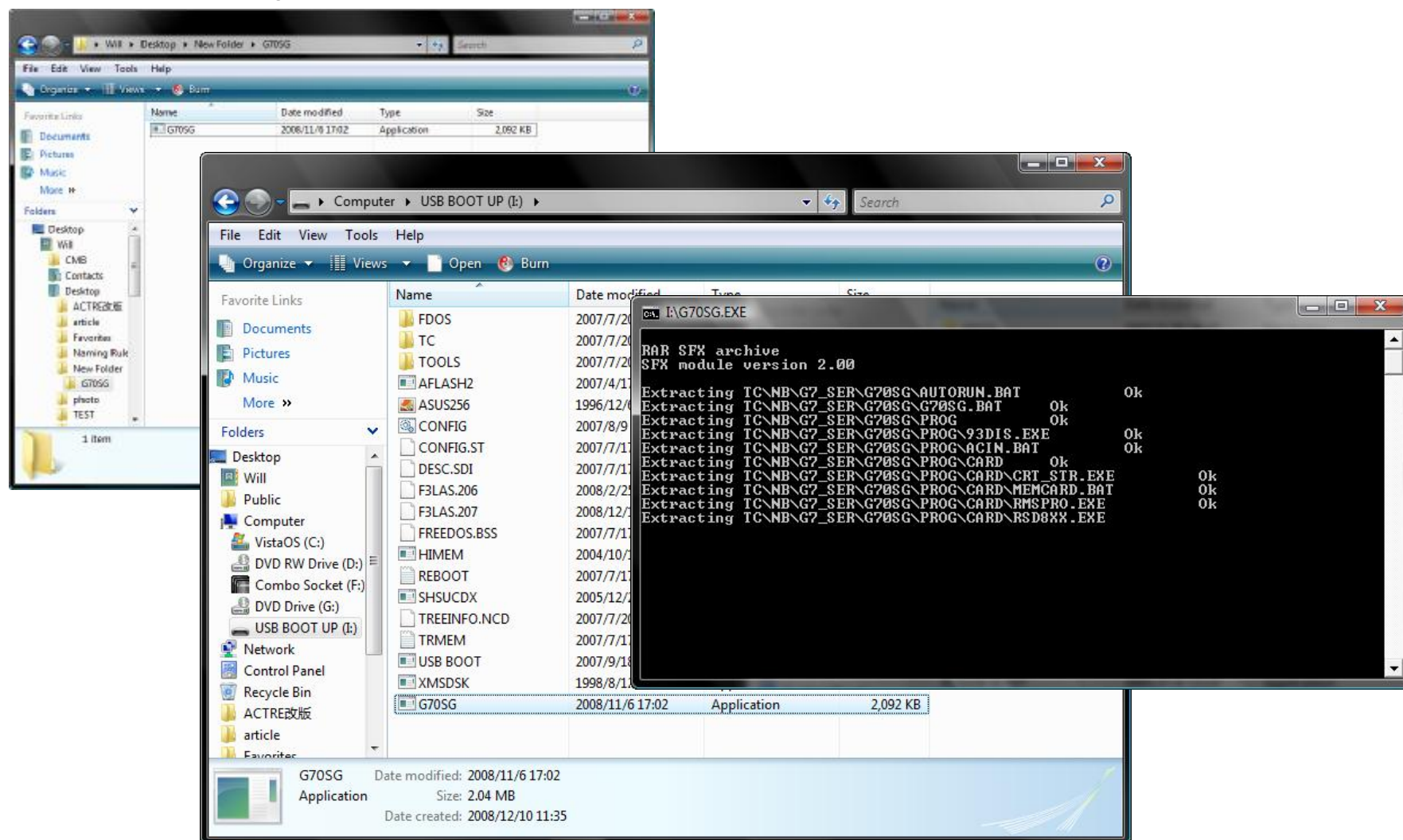
STEP 6: Extract the rar file just downloaded to any folder to get an executable self-extracting file





Create USB boot-up DISK

STEP 7: Copy the file to the root of AI_FLASH, and double click it





Chapter 7.2

Test in FreeDOS



Attention

1. Connect the test fixture correctly.
2. Please put on the battery and connect the power adaptor to DC power input jack before run the test program.
3. If it happens in problem, please inform the test supervisor.
For safety, Turn off main power when Test idling or during break time.



Test Setup

1. Press Power Switch then press the 'Power Button' to make power on.
2. NB system BIOS allows users to change some system hardware/function settings during POST (power on self test) stage. Users may hit **<F2>** key to enter SETUP mode in POST, the setup feature is categorized into 6 menus described as below.

Step 1. Load Setup Defaults



Step 2. Check/Setup System time/date

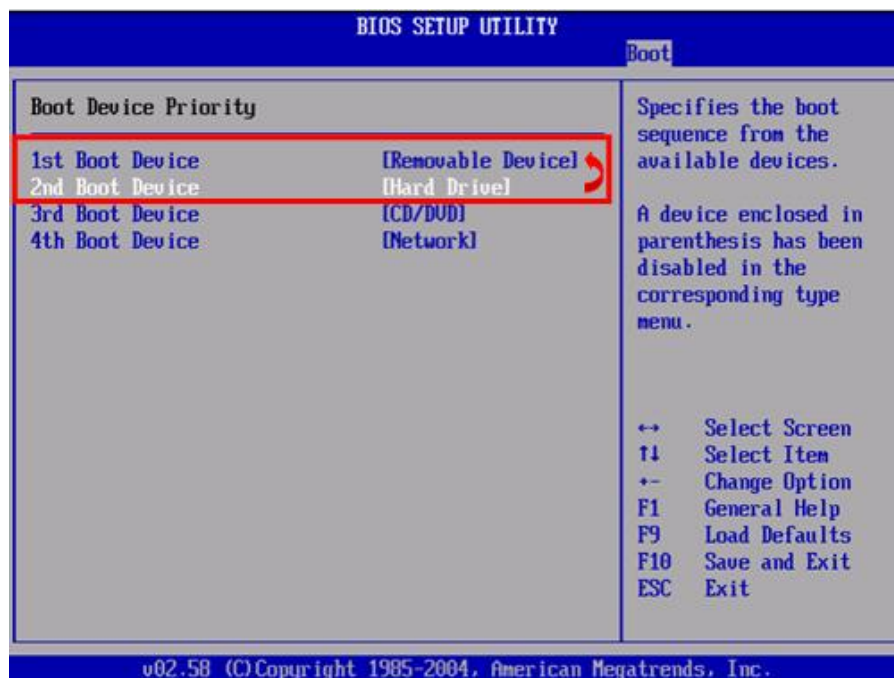




Test Setup

Step 3. Setup Boot Device Priority

Boot -> Boot Device Priority->1st Boot Device [Hard Disk]



Step 4. Save Changes and Exit, then System will reboot.





Enter FreeDOS Mode

1. Boot up the system with the Test USB Boot-up Disk.
2. Press ESC Key, then select booting from U Disk.
3. Entering FreeDOS.
4. Press ESC then see the FreeDOS UI.
5. Choose Testing Model. **EX. TC->NB->G7_SER->G70SG**
6. Select the BAT file of Testing Model, shown as below.

```
C:\TC\NB\G7_SER\G70SG 1:11p
Name      Name      Name
..
g70sg    bat
TEMP
PROG
autorun  bat

g70sg.bat      7088  9-23-08  1:57p
C:\TC\NB\G7_SER\G70SG>
1Left 2Right 3View.. 4Edit.. 5Memory 6DirSiz 7Find 8Histry 9EGA Ln 10Tree
```



Enter FreeDOS Mode

7. Select the Function Test Item according to the TEST Program Menu.

```
Menu of G70SG Notebook Test Program for ASUS
Copyright by ASUS                                     2008/9/25
-----
1. Check Main Ver          F. ESCD Test
2. Model, BIOS&CPU Test    G. MEMSIZE Test
3. LED Test                H. TOUCH PAD Test
4. Check MAC, GUID Test    I. LCDRGB Test
5. ACIN Test               J. INSTANT KEY Test
6. MS Card Test            K. Keyboard Test
7. SD Card Test            L. Function Test
8. Temperature Test        M. FANSPD Test
9. WLAN OFF TEST           N. CDROM Test
A. WLAN ON TEST            O. LID Test
B. USB Test                P. Battery Test
C. USB BT Test             Q. HDD Test
D. USB TV Test             R. Auto Run
E. USB CCD Test

Please Enter Your Choice -->
```



Model and BIOS Test

1. Check Product type
2. Check BIOS Version

```
DMU Utility Rev 1.26          Built Date:06/06/2003
-----
SMBIOS Structure Table Address:F000:9680
Entry Point:F000:C190
DMI Revision:2.4
Structure Numbers:34

M/B Manufacturer  : ASUSTeK Computer Inc.
M/B Product       : G70Sg
M/B Version       : 1.0
BIOS Vendor       : American Megatrends Inc.
BIOS Version      : 201
BIOS Release Date : 07/25/2008
System Manufact.  : ASUSTeK Computer Inc.
System Product    : G70Sg
System Version    : 1.0
UUID              : 412181DD-5F49-AA93-1480-0022154C1C85

Return Code = 1
```

Latest update:
Please check the Produce,
UUID and BIOS Version.
T.C.





Confirm the CPU SPEC

1. Confirm the CPU SPEC.
2. Confirm the current date/ time.

```
SMBIOS Structure Table Address:F000:9680  
Entry Point:F000:C190  
DMI Revision:2.4  
Structure Numbers:34
```

```
Socket Type      : Socket 478  
Manufacturer     : Intel  
Version          : Intel(R) Core(TM)2 Duo CPU T9300 @ 2.50GHz  
Max./Cur./Ext.(MHz) : 2500/2500/200
```

```
Current date is Thu 10-09-2008  
Current time is 1:11:19.46 pm
```

Please confirm the CPU Spec.
and current date/time.

T.C.

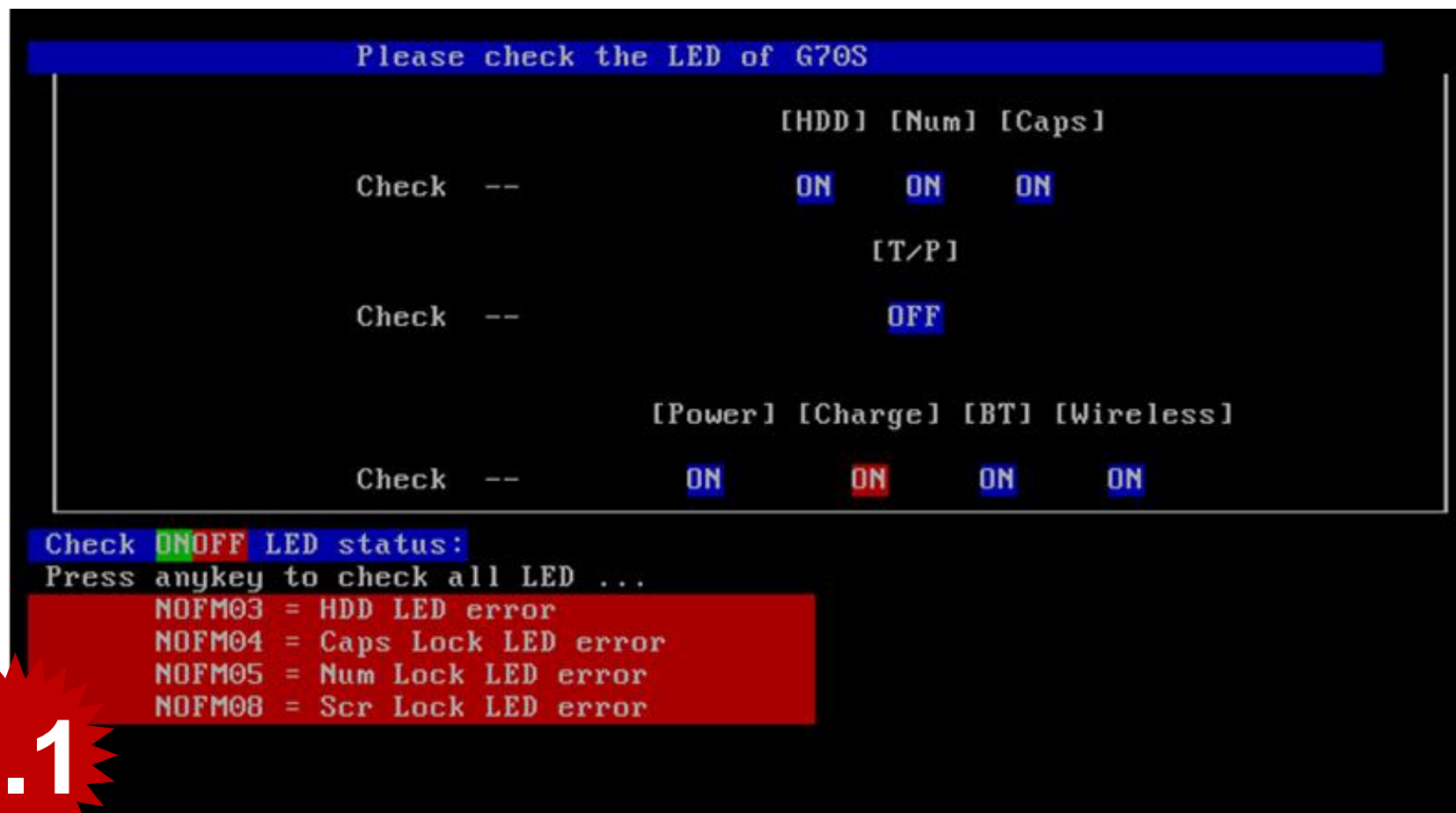




LED Test

• Check the light of LEDs, press any key to test next LED. Ensure the status LEDs function properly.

• If the LEDs are different to the screen display, that means test fail.

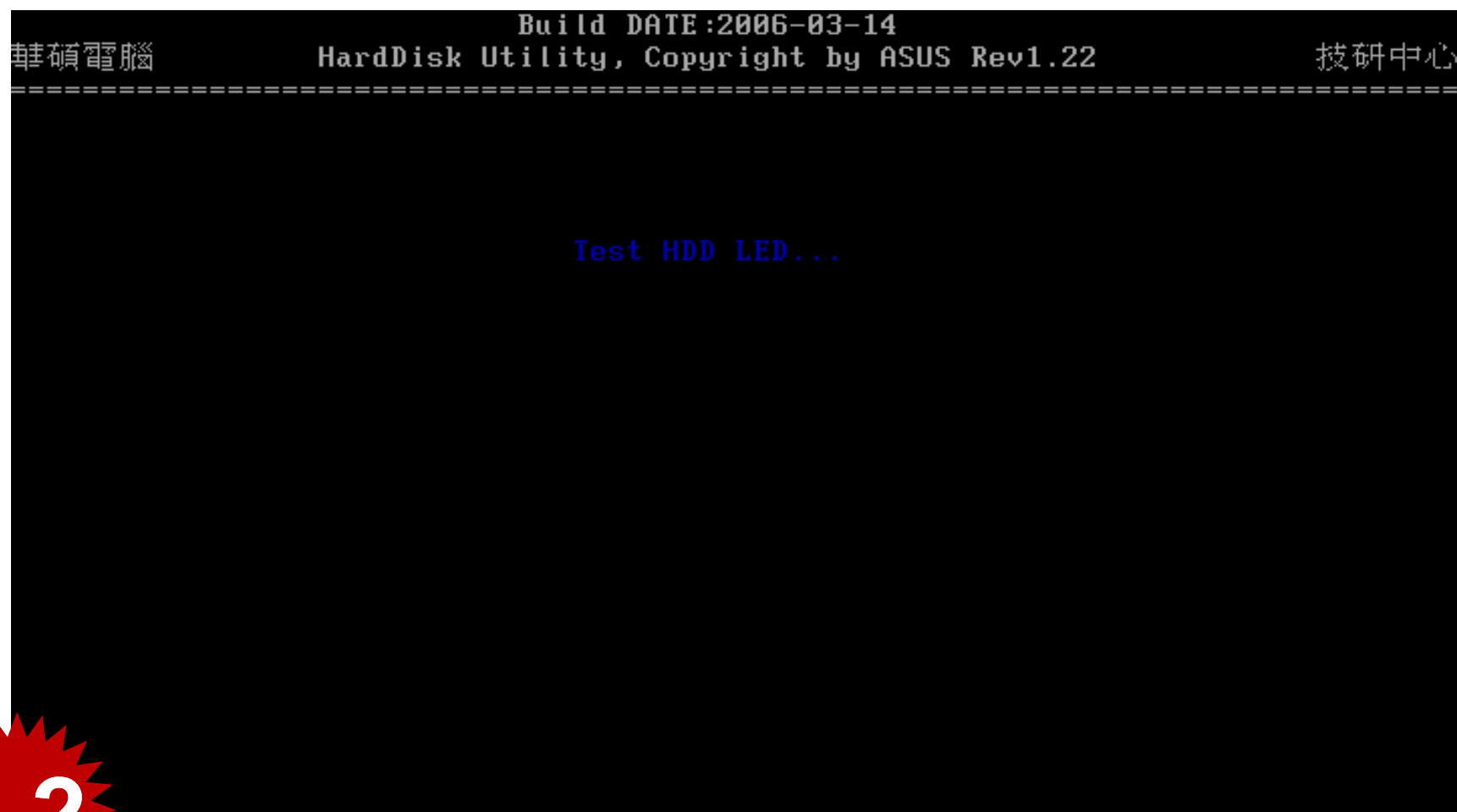


3.1



LED Test

⌐ Check the light of HDD LED, then press 'H' to exit.





CHK 1394&MAC

Check 1394 ID number is correct.

```
Build DATE:2007-02-14
ASUS BIOS Tool, Copyright by ASUS Rev2.06 Diags
=====
CNFG block size= 0100
Read Offset E0 ~ E7, Data= 001E8C0001440F6D

1394ID=001E8C0001440F6D

[ ? Please check the GUID with ?
  ? label of board. ?
  I.C. ]

Return_Code=-1
```

4.1



CHK 1394&MAC

p Input 1394 address

p **Please type the right 1394 address. Then save this file!!**

```
FreeDOS Edit 0.7d
File Edit Search Utilities Options Window Help
1.dat
001e8c0001440f6d
* INS Line: 1 Col: 17 9:38:58am
```

4.2



CHK 1394&MAC

p Check MAC address is correct.

```
Build DATE:2007-09-21
ASUS      Serial EEPROM Utility, Copyright by ASUS Rev1.92      Diags
=====
Attansic L1/L2
  Bus_No = 02
  Device_No = 00
  Function_No = 00
=====
MAC Address -> 001D609E8290

001d60
9E8290

Return_Code=-1
```

? Please check the MAC@ with ?
? label of board. ?
T.C.

4.3



CHK 1394&MAC

Ⓟ Input MAC Address

Ⓟ Please type the right MAC address. Then save this file!!

```
FreeDOS Edit 0.7d
File Edit Search Utilities Options Window Help
1.dat
001d6009914e
Line: 1 Col: 13 1:26:19pm
```



AC-IN Test

p Insert the AC input to check. Test fail will show this PIC

FAIL !

AC-in test

Error code = N0FY03 = Can't detect AC input.

Please insert it and check again.

Press any key to continue . . .

5



MS CARD Test

Please insert the MS-card into Card Reader (Picture 1)

Picture 1

Please insert MS CARD

Picture 2

Please insert MS CARD Alcor Micro ReaderMP
Copyright(C) 2008 Alcor Micro Corp. All Right Reserved.
Start to write 100 sector into file
Write ProgressOK
Read ProgressOK
Test passed

FAIL!

Test fail, Please call PE for help!

6

Test fail will show this PIC



SD CARD Test

Picture 1

Please insert SD CARD

Picture 2



Please insert SD CARD before booting up Alcor Micro ReaderMP
Copyright(C) 2008 Alcor Micro Corp. All Right Reserved.
Start to write 100 sector into file
Write ProgressOK
Read ProgressOK
Test passed

FAIL!



Test fail will show this PIC

7

and test fail, Please call PC for help!



Temperature Test

Test fail will show this PIC

FAIL !

Temperature test

Error code = N0FY02 = Temperature Detect Error

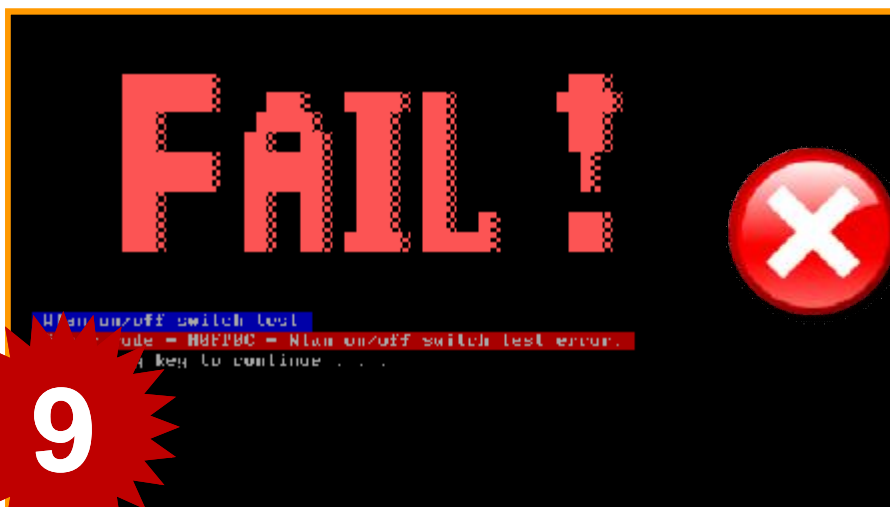
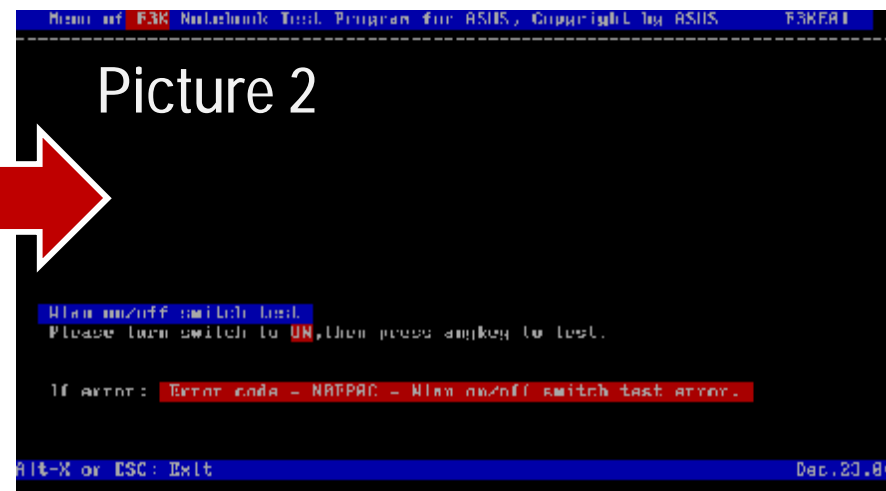
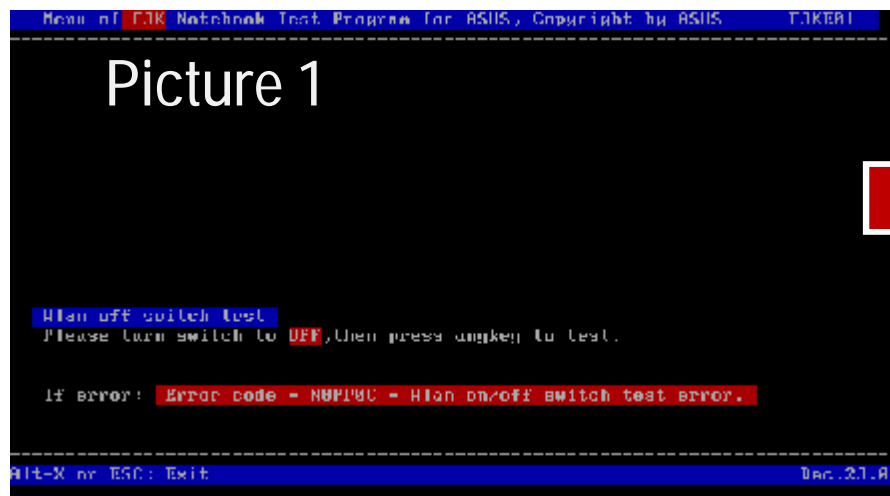
Press any key to continue . . .

8



WLAN OFF/ON

Please turn off/on the WLAN switch



Test fail will show this PIC



BLUETOOTH

USB BlueTooth device check pass

10



MEMSIZE Test

The below pictures shows the information of CPU and system memory to us.

```
Build DATE:2007-03-01
ASUS CPU Utility, Copyright by ASUS Rev2.15 Diags
=====
***** CPU Test *****

Intel(R) Core(TM)2 Duo CPU T7500 @ 2.20GHz

Registers Test          ===== Pass
Arithmetics Test        ===== Pass
Logical Operations Test  ===== Pass
String Operations Test  ===== Pass
Exceptions Test          ===== Pass
CPU MMX Technology Support ===== Yes
CPU SSE Extensions Support ===== Yes
CPU SSE2 Extensions Support ===== Yes

Test CPU Function.
T.C.

Return_Code= 0
Press any key to continue . . .
```

11



MEMSIZE Test

Please confirm the memsize

```
Build DATE:2007-01-10
ASUS      Memory Utility, Copyright by ASUS Rev1.12      Diags
=====
Memory Module Information:
  SODIMM0 = 2048 MB, Type:DDR2, Synchronous, Speed=667 MHz
  SODIMM1 = 2048 MB, Type:DDR2, Synchronous, Speed=667 MHz
  Total Memory Size = 4096 MB, Memory working speed = 667 MHz

  4096 MB

  Please confirm the memsize.
  _____T.C._____

Return_Code=-1

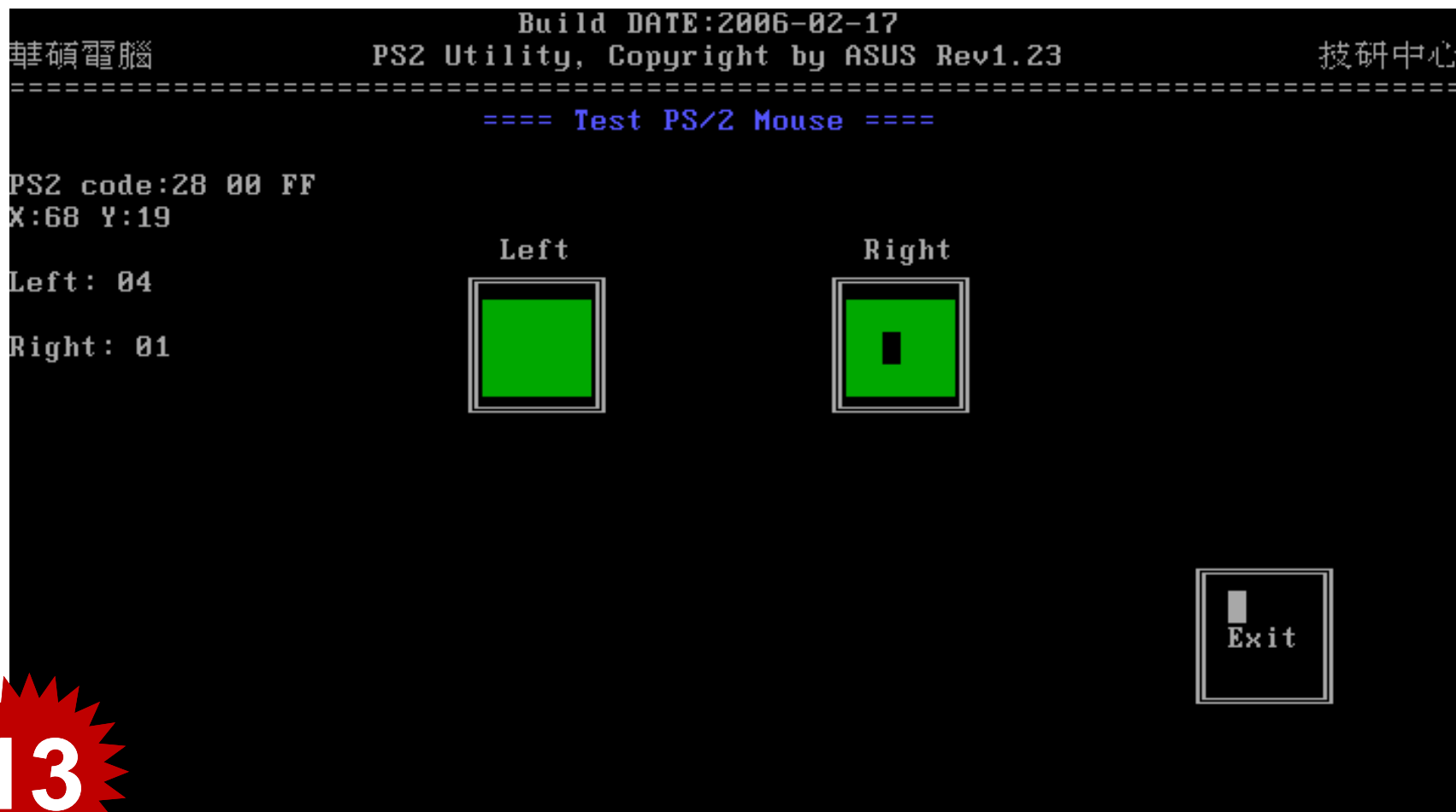
any key to continue . . .
```

12



Touchpad Test

When your finger touch the pad and move one direction, the blue sign move the same direction with your finger.

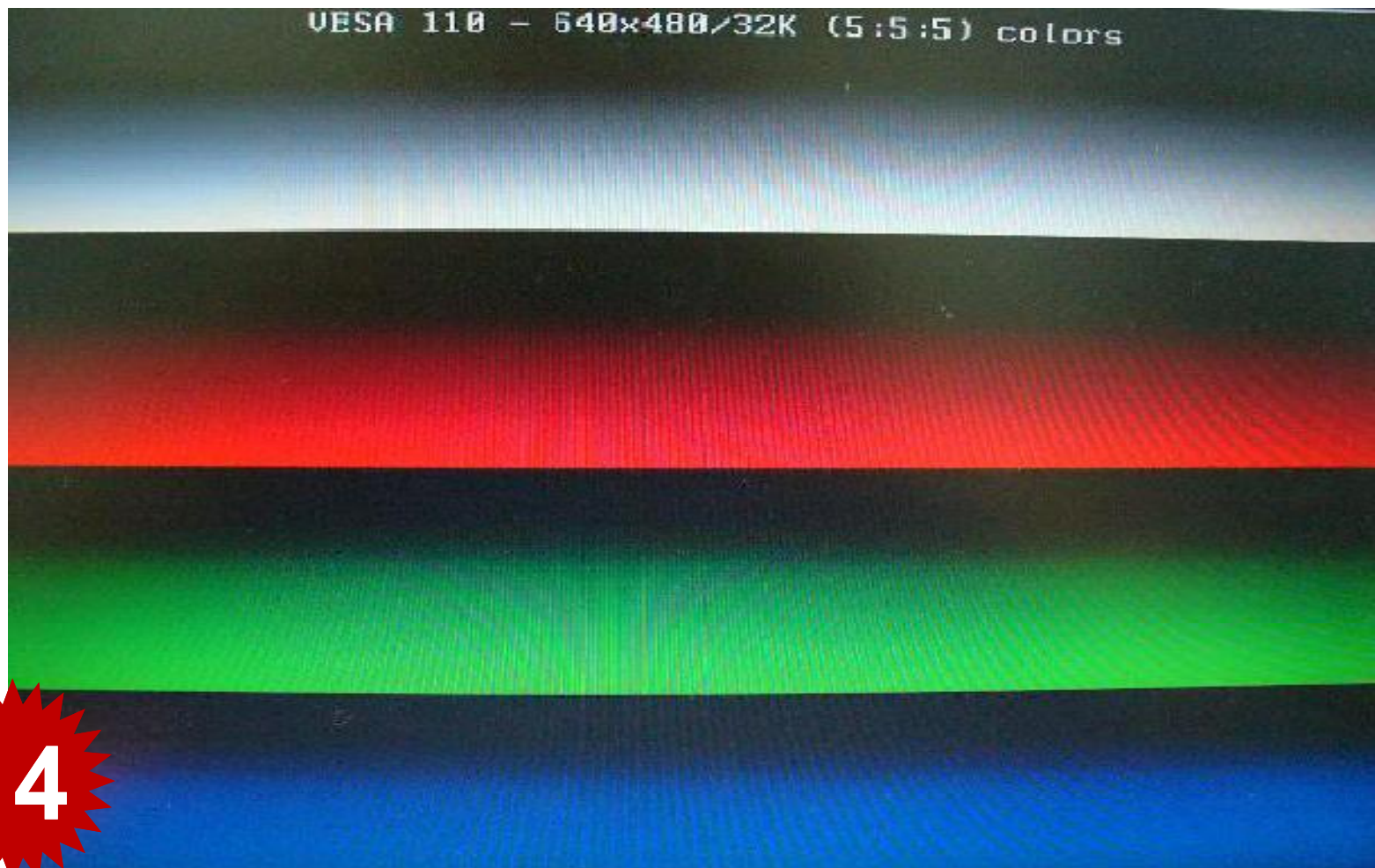


13



LCD RGB Test

If you find the vertical wave and horizontal wave between the LCD RGB Test, It has problem.



14



INSTANT Test

Press the button 1 , the grids will change color.
Please according to the words in below picture.

===Model_Name===
G70S

ML_KEY 1	<input type="text" value="1"/>
ML_KEY 2	<input type="text" value="2"/>
ML_KEY 3	<input type="text" value="3"/>
ML_KEY 4	<input type="text" value="4"/>
ML_KEY 5	<input type="text" value="5"/>

Please testing by the screen indicate.

15



KEYBOARD Test

```
1128g Keyboard test:
0. English Int. Keyboard
1. Japanese Int. Keyboard
2. Europe Int. Keyboard
3. QWERTY
Please Enter Your Choice > 0,1,2,3
```

Choose one language for the Keyboard, and then into next screen.

16

Please check the keyboard function. Press all the key at the keyboard. then the program can exit and continue.
If any key doesn't change to Blue color, it means the test program is fail.



Press Fn + DEL key to test



Function Test

Test fail will show this PIC



```
Build DATE:2004-05-04
FuncTest.exe. Copyright by ASUS Rev1.04

Setting Clock... OK!
Testing DMA Controller: 082370 5 #1, 082370 5 #2, Page Register OK!
Testing Interrupt Controller ... OK!
Testing Protect Mode... OK!
Testing Coprocessor... OK!
Testing Clock... OK!
Testing Calendar... OK!

Function Test Failed!!
Return_Code=0
```

```
*****
***** FUNCTION TEST FAIL *****
*****NB FUNCTION TEST FAIL.Problem code=NOFF03 *****
*****
Press any key to continue . . .
```

17



FAN OFF/ON Test

Unable to wheel or Speed Error on FAN



```
ASUS                               Build: MATR:2A07-05-15
Fan Utility, Copyright by ASUS Rev2.45  Diag
TIDE

... Disable the fan ...

Return_Code=0
```

18

Test fail will show this PIC



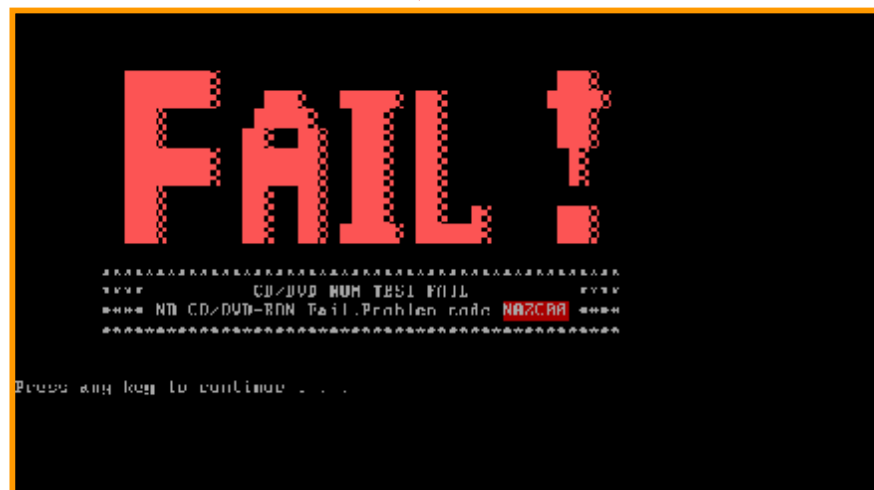
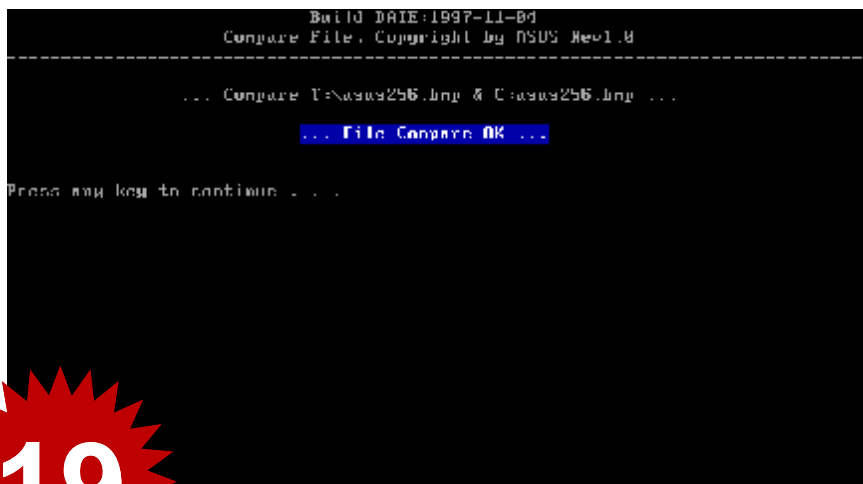
```
FAIL!

Fan speed test
Error code: NAFR02 Unable to wheel or speed error on fan .
Press any key to continue . . .
```



CD ROM Test

Test fail will show this PIC





LID Switch Test

Close LID panel to test.

```
Lid switch test if function error press Z
1. Please close LCD panel,to suspend LCD.
2. Close LCD panel ,LCD backlight should be OFF.
Close LCD panel to test ...
If error: Error code = NOFK05 = LID switch test error.
```

20

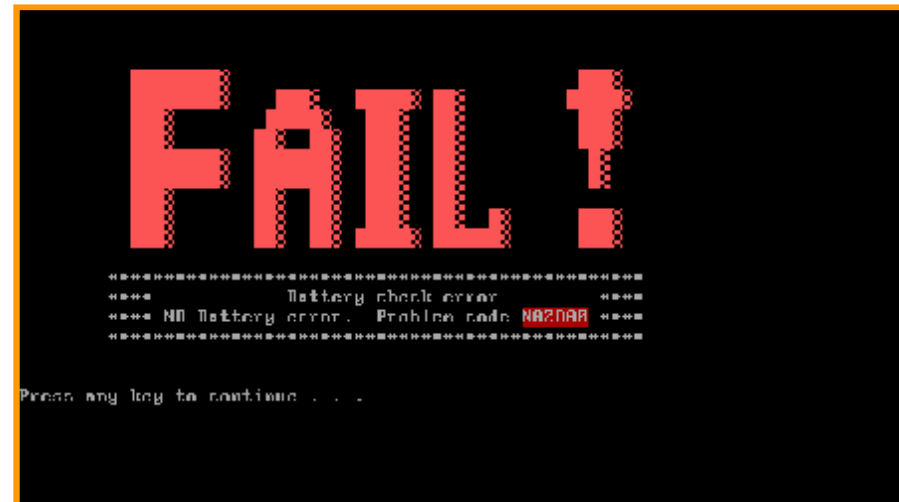


BATTERY CAPACITY Test

Check the battery capacity.



Test fail will show this PIC



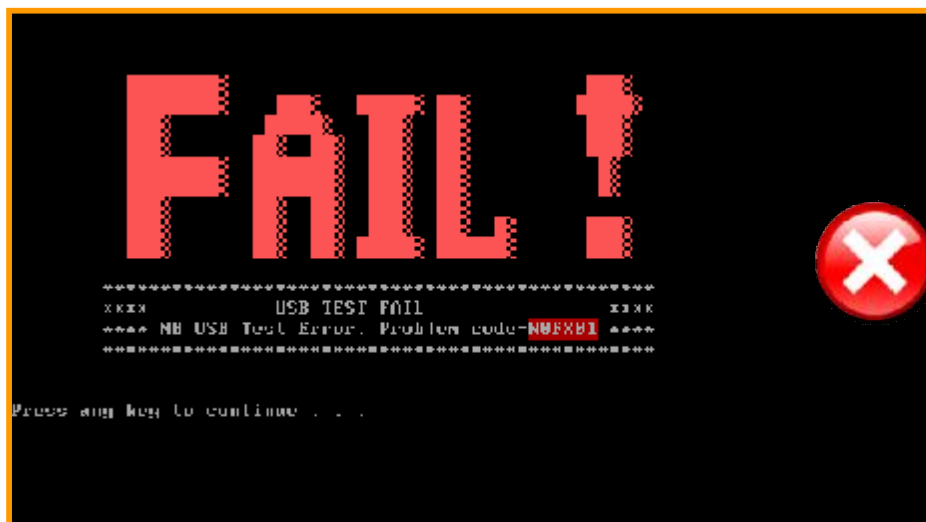


USB Test

```
SI_End Build DATE:2007-03-09 200704
ASUS USB Utility. Copyright by ASUS Rev6.23 Diags
-----EHCI UHCI-----
Vendor HC HUB PORT : FA_Ver : EDN HUB INT ISO NISO : PWR D+ D- : HI FI LI
INTEL 2 : 0 : 6.2305 : 0 0 0 0 : 4706 2025 : 0 : OK OK
INTEL 2 : 1 : 6.2305 : 0 0 0 0 : 4574 2032 : 1 : OK OK
INTEL 3 : 1 : 6.2305 : 0 0 0 0 : 4706 2025 : 0 : OK OK

Return Code=0
```

22



Test fail will this picture.



Chapter 8

Windows Testing Program



Install WTP

Step 1: Download **Windows Main Program** from SIP.

SIP - Windows Internet Explorer

http://sip.asus.com/index.aspx?ReturnUrl=document%2fDisplayDocumentContent.aspx?doc_id=6097

ASUS Service Information Portal

Support Repair Learning Project Survey Document Admin Profile ITRS

ASUS NOTEBOOK

ACTRE	ARN Info	Main Program	EOL Model	USB Boot	L2.5 Order	Key-Partys Program
Aging Program	Clean CMOS	DOS Stress	MB Repair KB	Weekly Package	Equipment List	

Mode	File Name	Model	Update date
FreeDOS	NBDOS_1118.GHO	182	2008.11.18
Windows	Windows Main Program		2008.9.22

Serial	Model Number	Port Number (TSICT)	BIOS	Test Program		TCB	S.O.P		Repair Guide (RG)	Troubleshooting Guide(TSG)		Update Date	Remark
				DOS	Windows					EN	CN		
A3	A3Ac	NFN	212	A3Ac.rar		TCB	Assemble	Repair Guide					
	A3Fp	NIF		A3Fp.rar		TCB	Test SOP	Assemble	Repair Guide				
	A3H	NFM	212	A3H.rar		TCB	Test SOP	Assemble	Repair Guide				
	A3Vp	NFK	206	A3Vp.rar		TCB	Test SOP	Assemble	Repair Guide				
	A3Vc	NFL		A3Vc.rar		TCB	Assemble	Repair Guide					
	A6F	NIK	222	A6F.rar		TCB	Test SOP	Assemble	Troubleshooting Guide				

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Internet | Protected Mode: Off | 100%



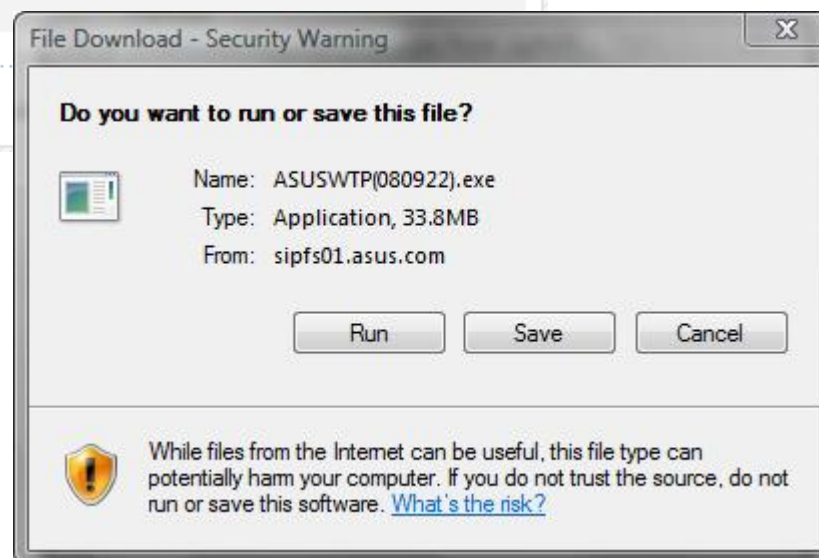
Install WTP

Step 2: Save the **ASUSWTP.exe** test program.

 **Download File Information**

File ID:	55298
File Name:	ASUSWTP(080922).exe
Download Count:	61
Note:	If the network is unstable, you may use SIP Document Client instead.

Download From:  Taiwan  Europe





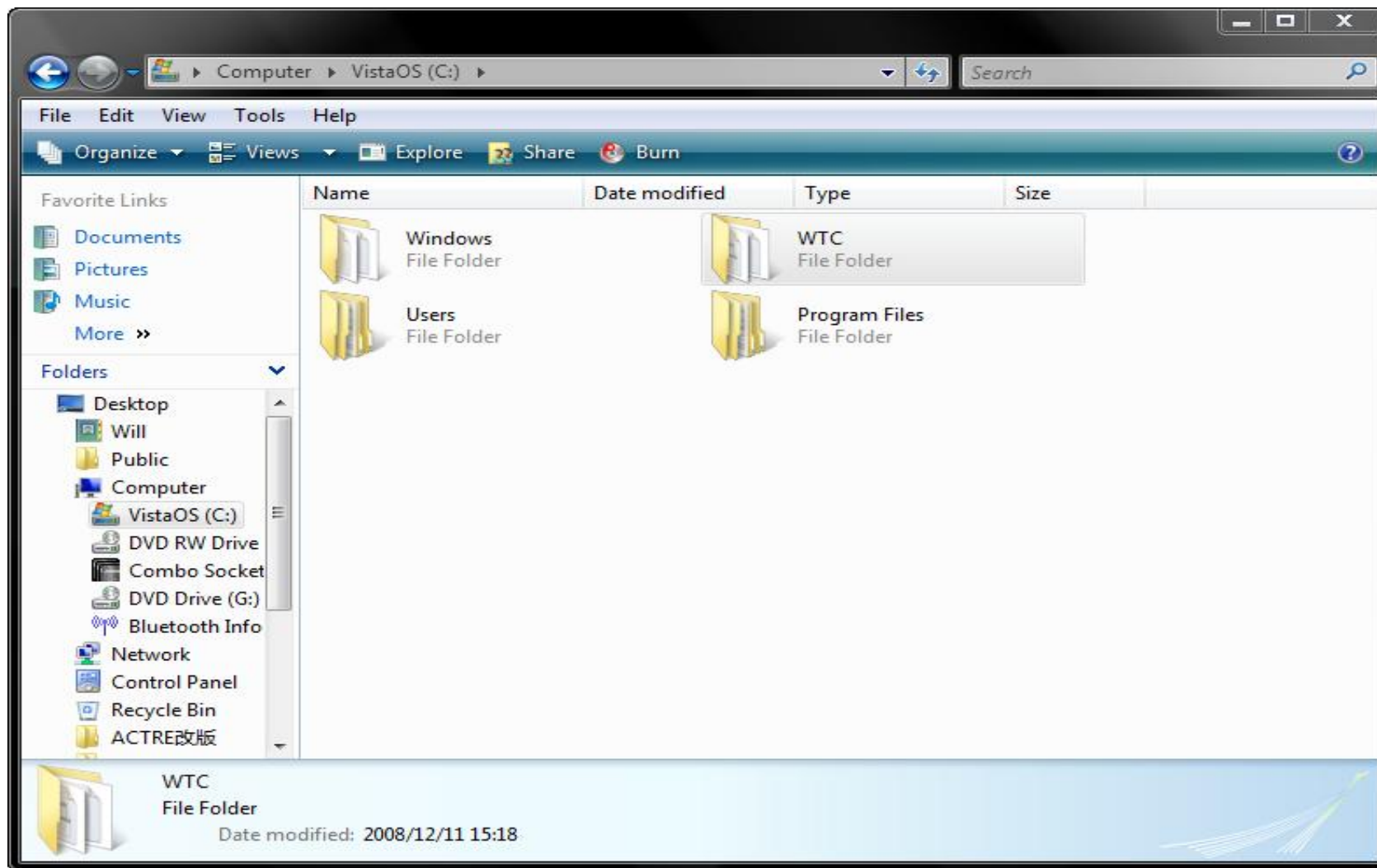
Step 3: Download the relevant **Test Program** from SIP.

[illegible]



Install WTP

Step 4: Extract the file .

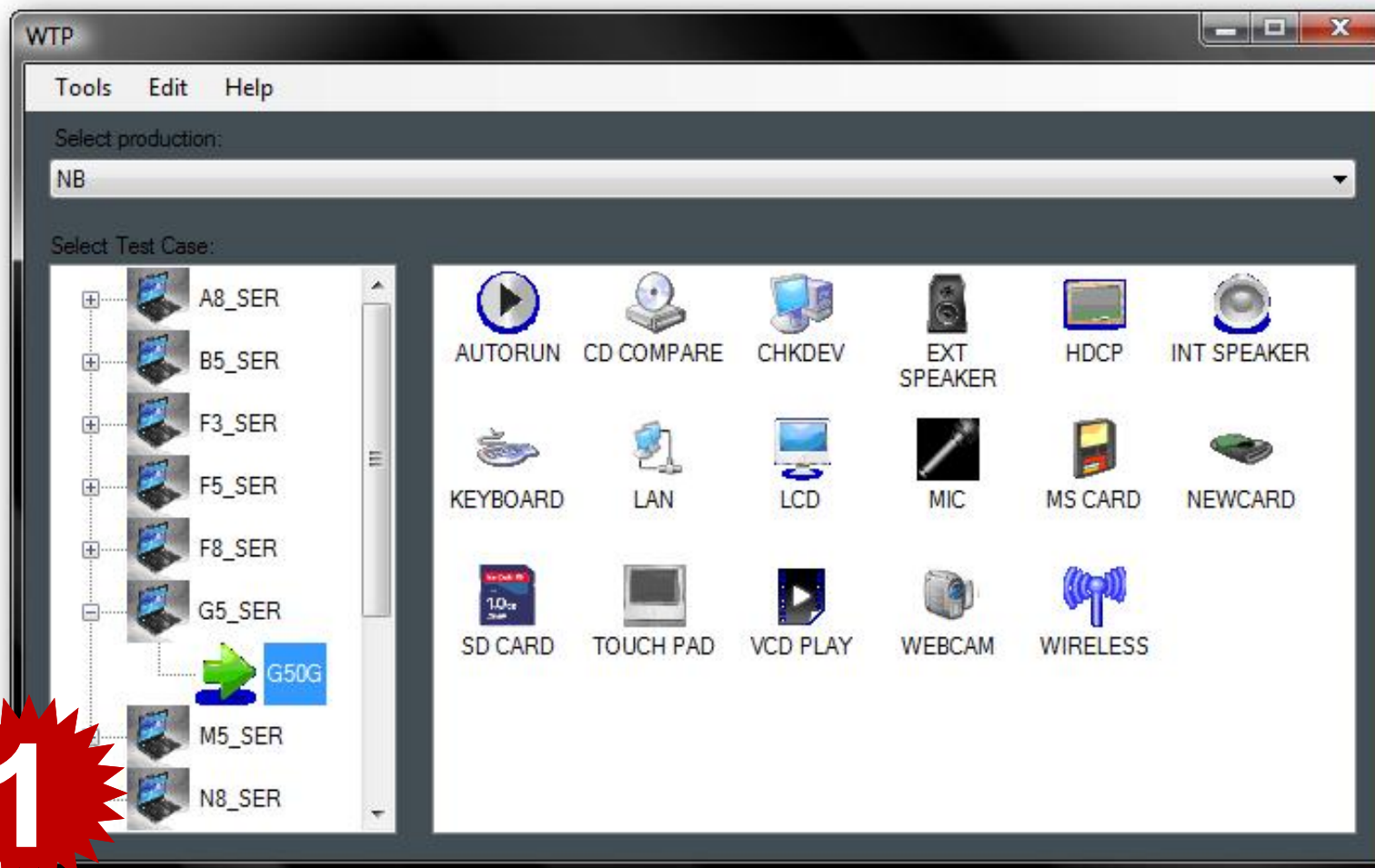




WTP Main Menu

Step 1: Run ASUSWTP.exe on desktop

Step 2: Choose Model name and running test program.





CHECK DEVICE

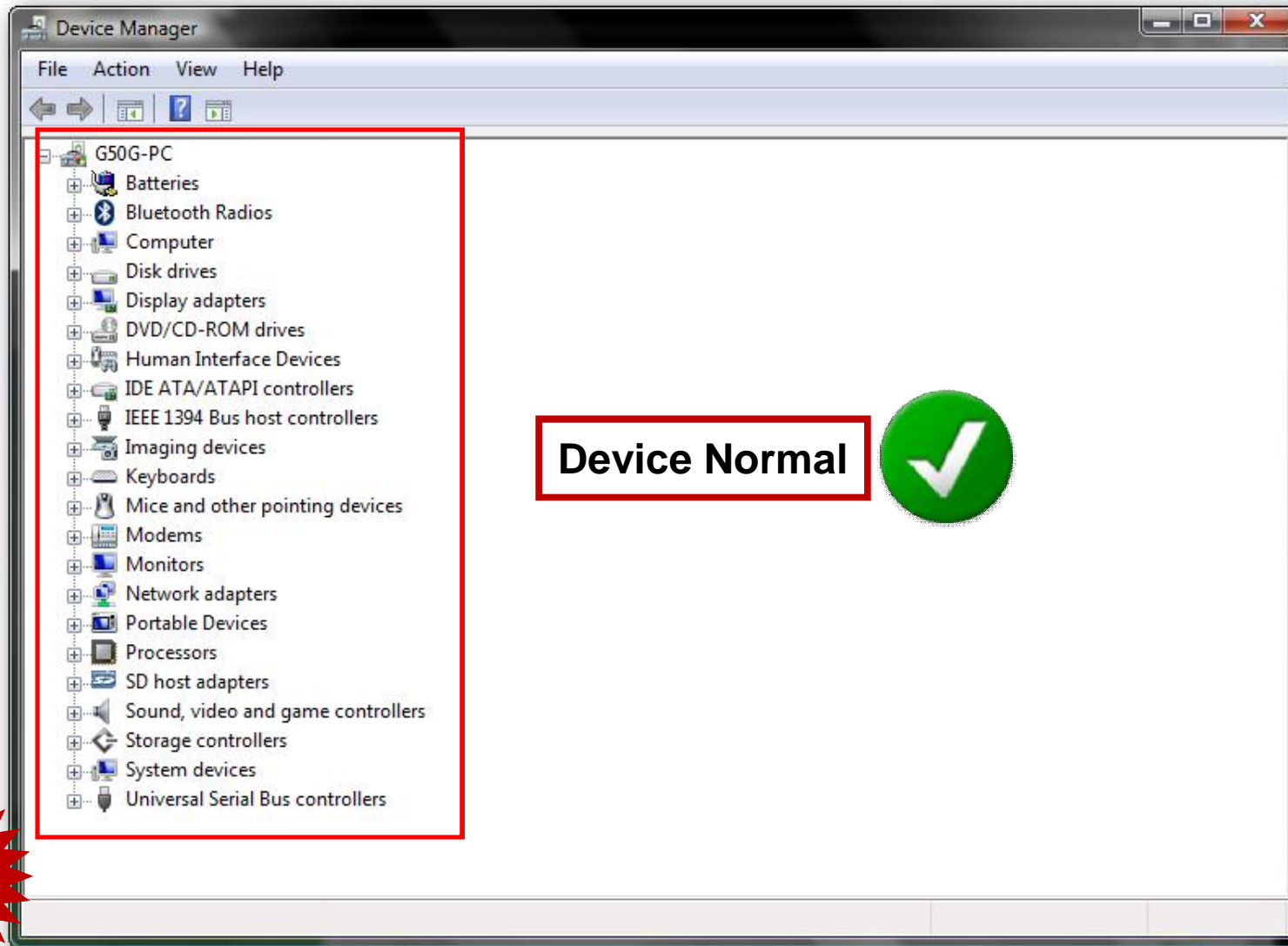
1. Check Machine all device is ok?
2. Check software and hardware is normal?

```
C:\Windows\system32\cmd.exe
ASUS Build DATE: 2007-08-25 Windows ASUS Tools, Copyright by ASUS Rev1.08 Diags
=====
Search Data = DISABLE
The Result Is :
Return_Code=255
*****
*****CHECK DEVICE DRIVER PASS*****
*****
Press any key to continue . . .
```

2.1



CHECK DEVICE



2.2



CHECK DEVICE

```
C:\Windows\system32\cmd.exe
Build DATE: 2007-08-25
ASUS Windows ASUS Tools, Copyright by ASUS Rev1.08 Diags
=====
Search Data = PROBLEM
The Result Is :
Line 426 = DEVICE HAS A PROBLEM: 43.

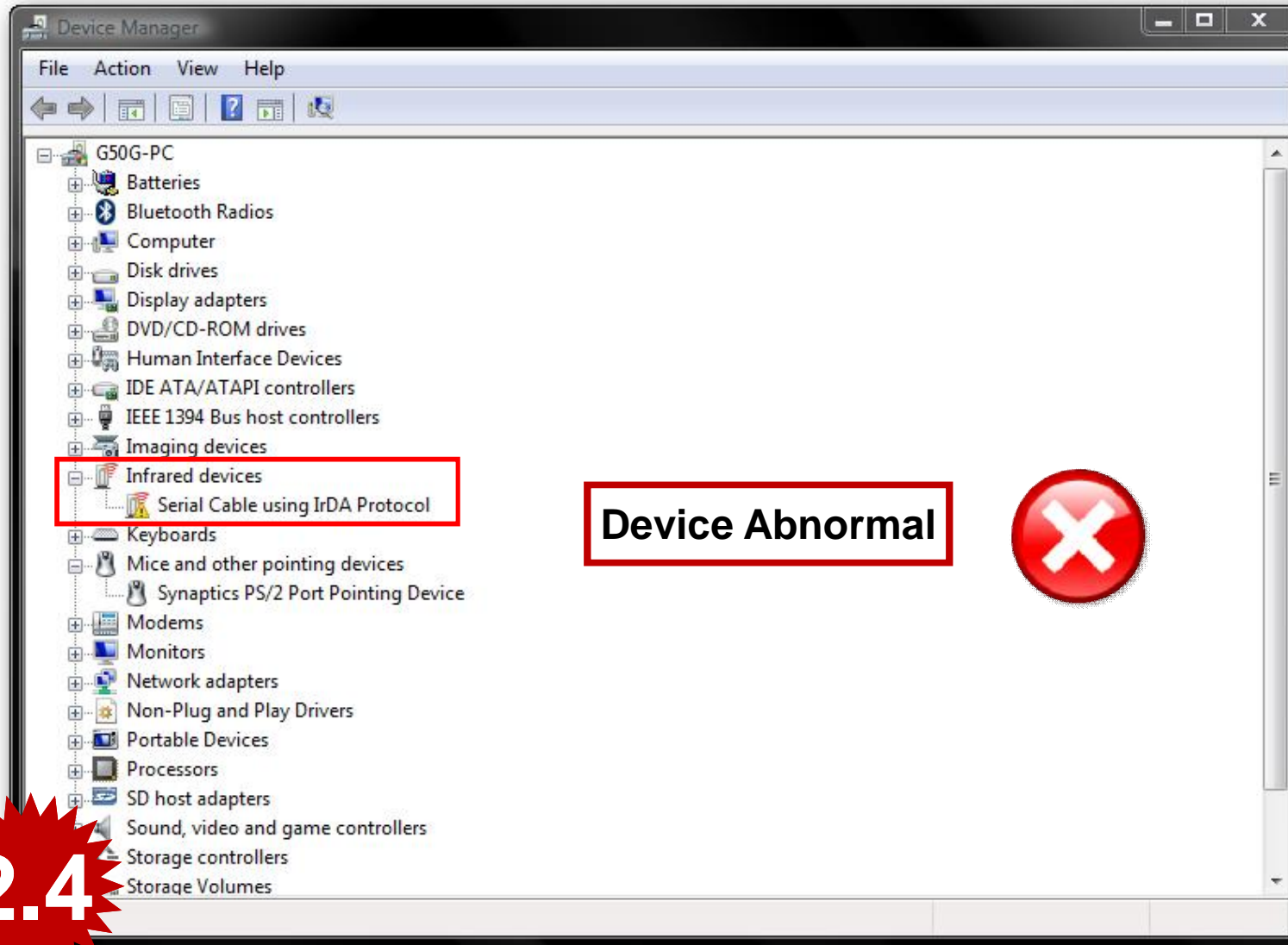
Return_Code=0
*****
*****CHECK DEVICE DRIVER FAIL*****
*****
Press any key to continue . . .
```



2.3



CHECK DEVICE



2.4



CD COMPARE

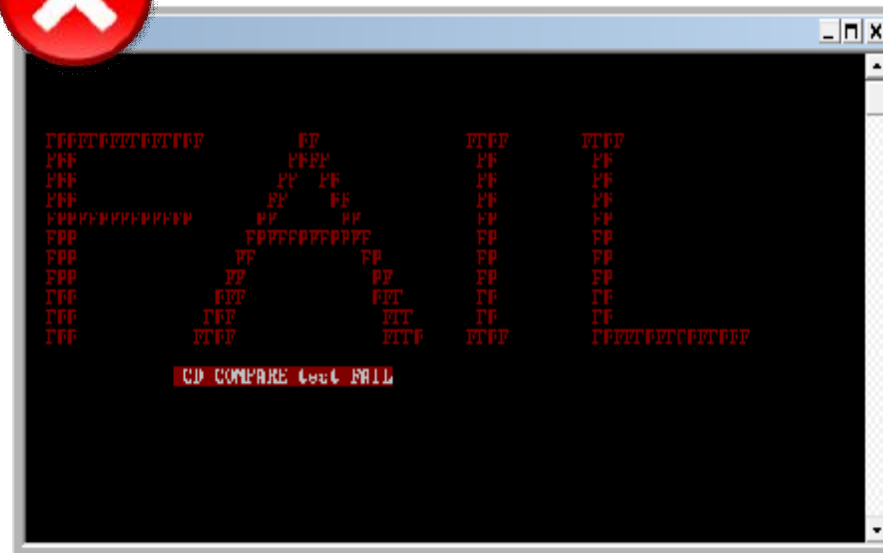
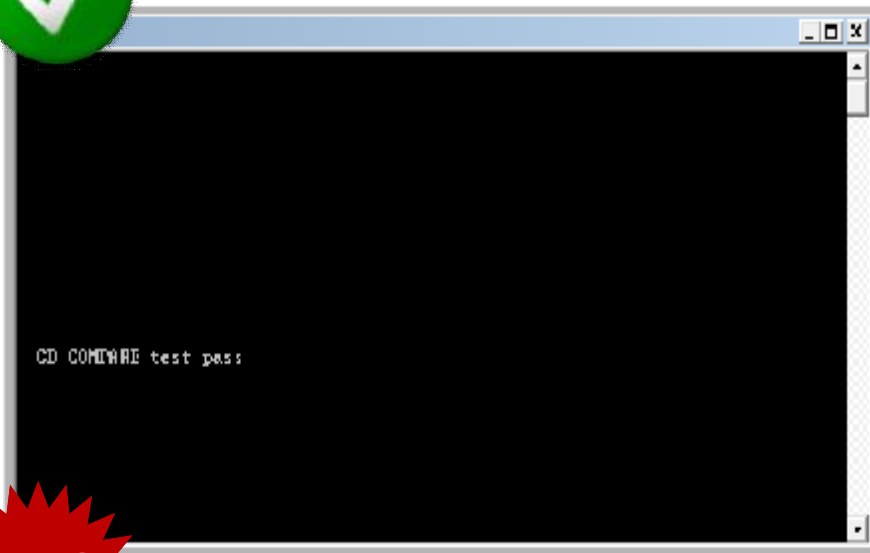
1. Please insert a DVD-RW disc into ODD



3.1



CD COMPARE



3.2



EXT/INT SPEAKER Test

p Press the number that you heard to test speaker function.

```
C:\Windows\system32\cmd.exe
Build DATE:2007-01-03
Audio diagnostic , Copyright by ASUS Rev1.05
=====
Test Speaker function utility
Play 0~9 wav file randomly.
Please press the number <0~9> that you heard: _

C:\Windows\system32\cmd.exe
PASS=1    FAIL or Retry=3
Please Enter Your Choice : _
```

4



HDCP Test

Connect a monitor to notebook by a HDMI cable, the monitor must support HDCP.



5.1



HDCP Test

Press “Fn+F8” to select the **“HDMI ONLY”** display

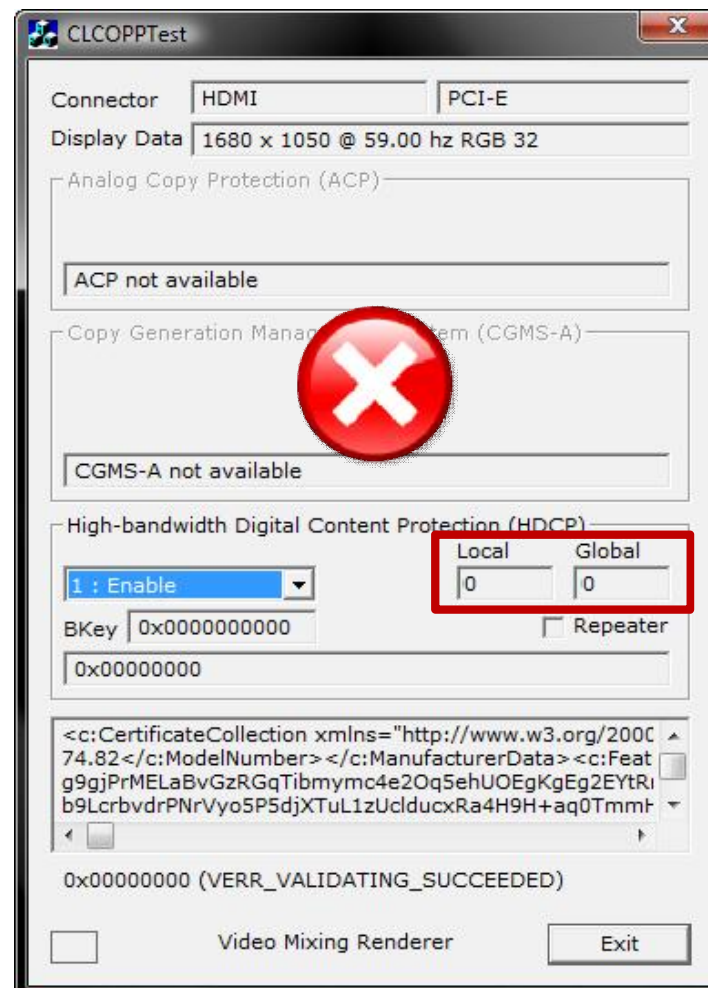
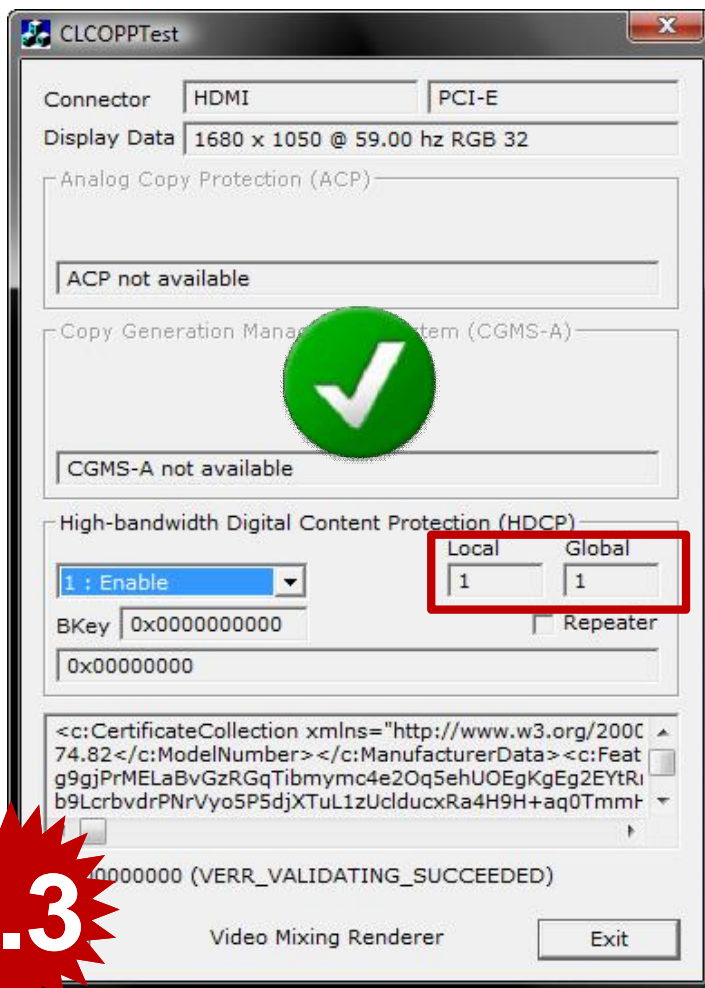


5.2



HDCP Test

- p Select “**1: Enable**”, Local & Global changed to **1**, the model’s HDCP function is normal.
- p Select “**1: Enable**”, Local & Global doesn’t change, the model’s HDCP function is abnormal.





KEYBOARD Test

```
C:\Windows\system32\cmd.exe

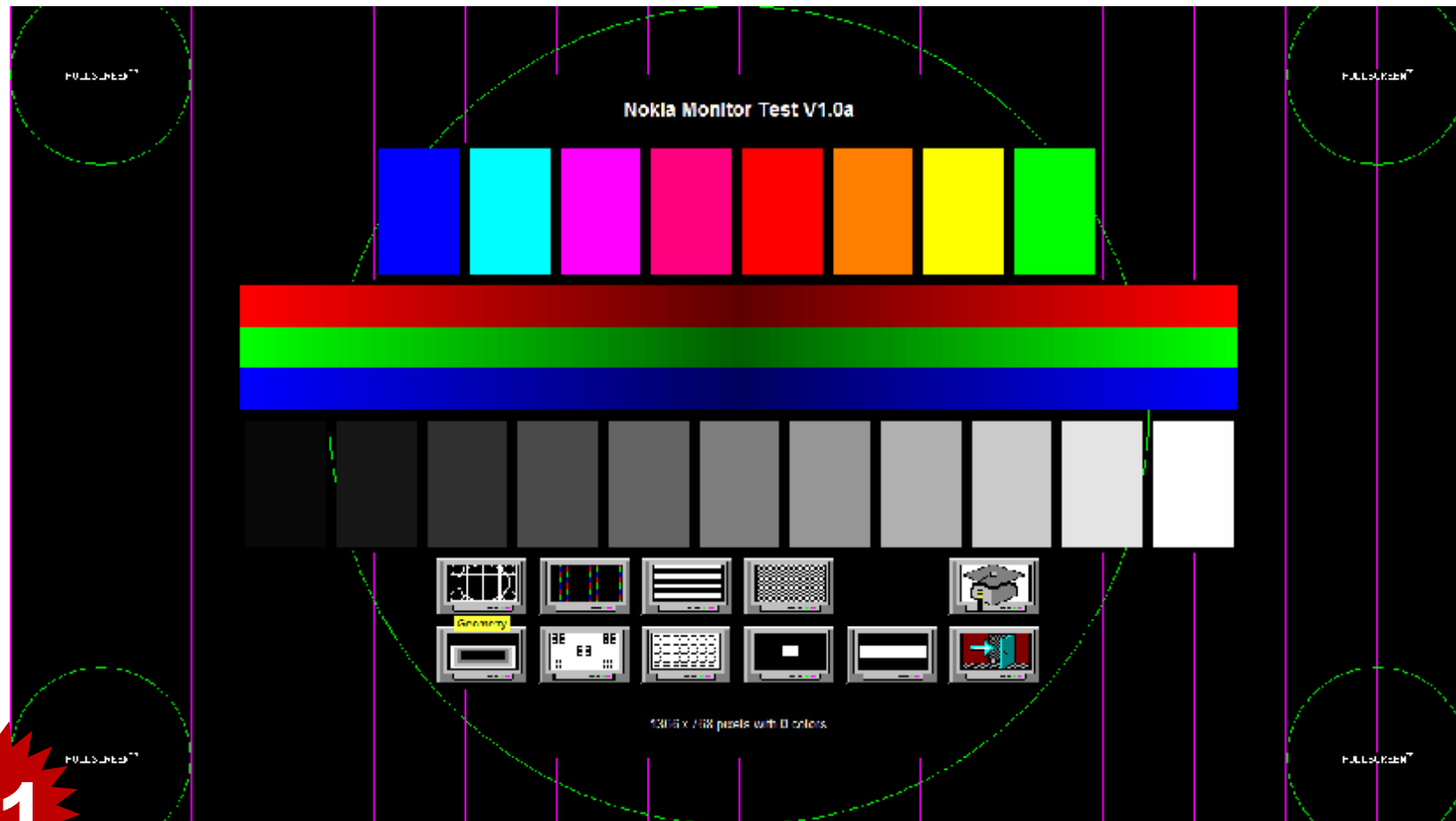
G50G Keyboard test:
1. English Int. Keyboard
2. Europe Int. Keyboard
3. Japan Int. Keyboard
Q. QUIT
Please Enter Your Choice -->
```





LCD Test

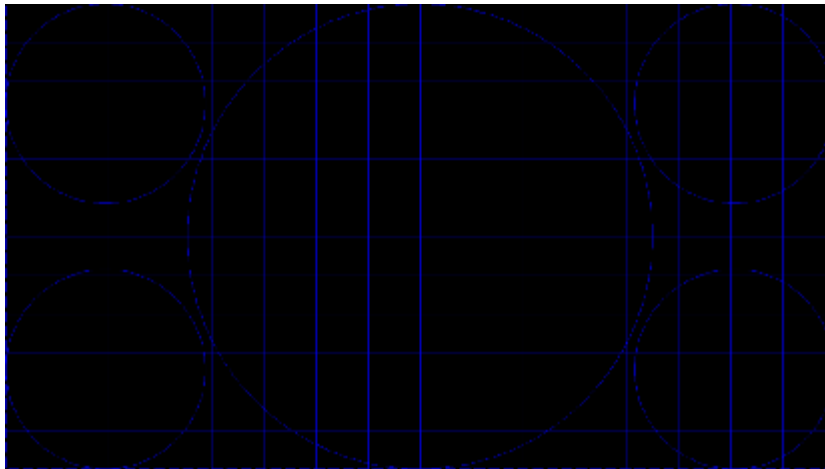
Run Nokia Monitor Test V1.0a to test.



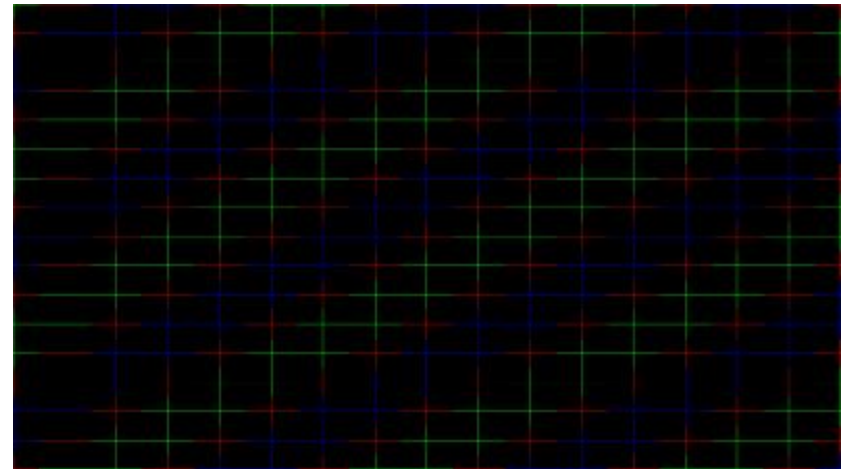
7.1



LCD Test



Geometry



Convergence



Screen Regulation



Screen Regulation

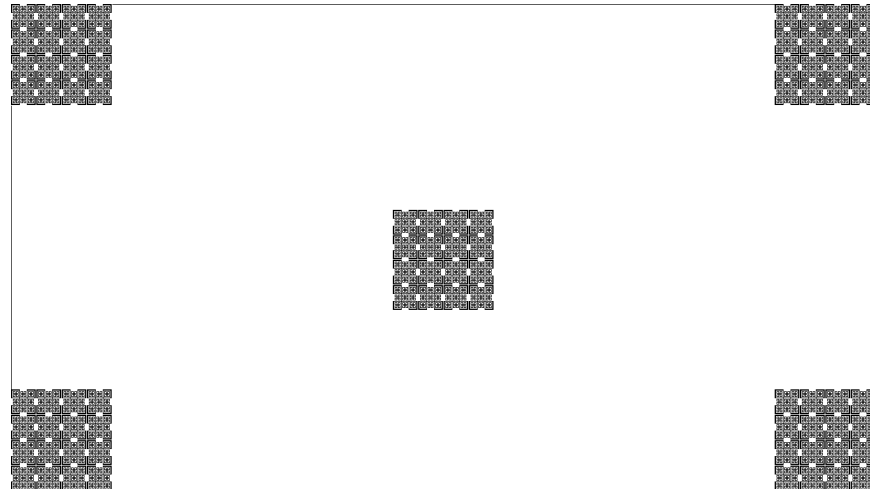
7.2



LCD Test



Colour



Focus



7.3

Brightness and Contrast

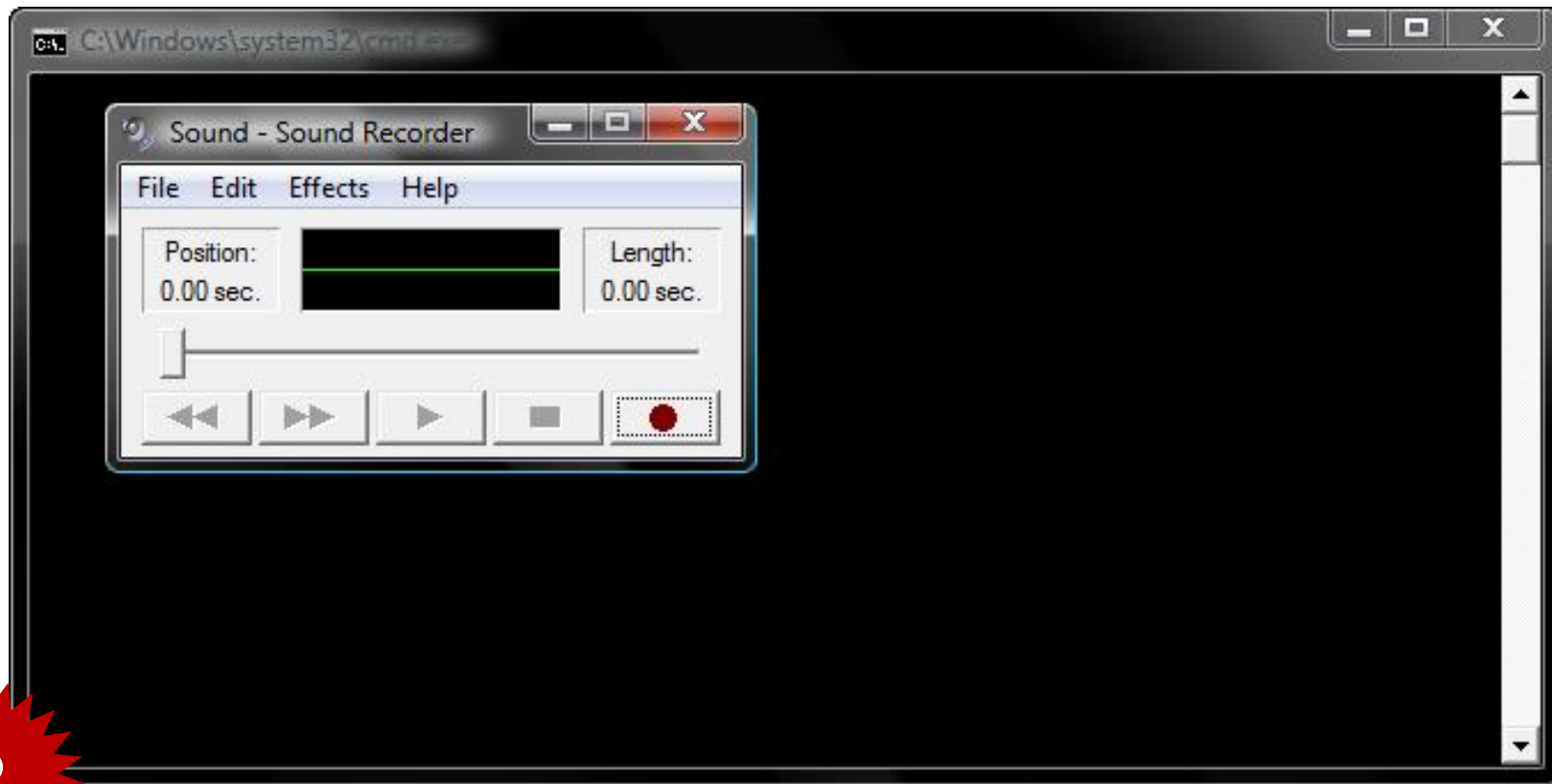


Resolution



MIC Test

p Insert **MICPHONE** to test.



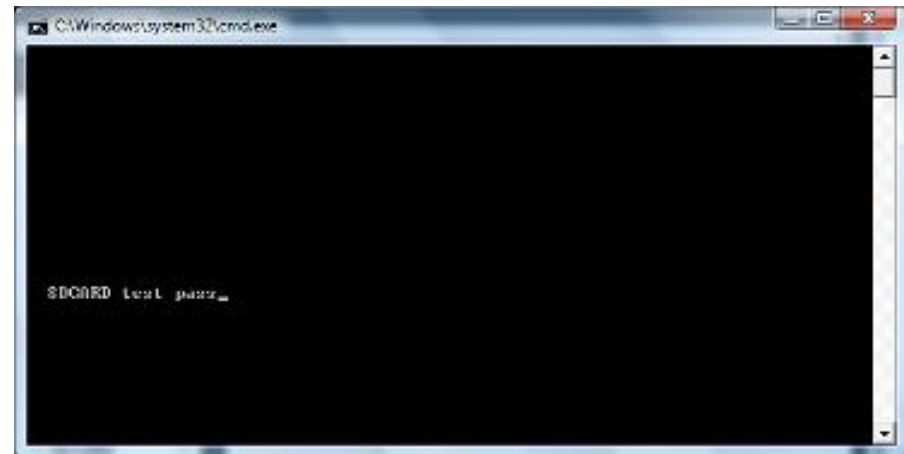
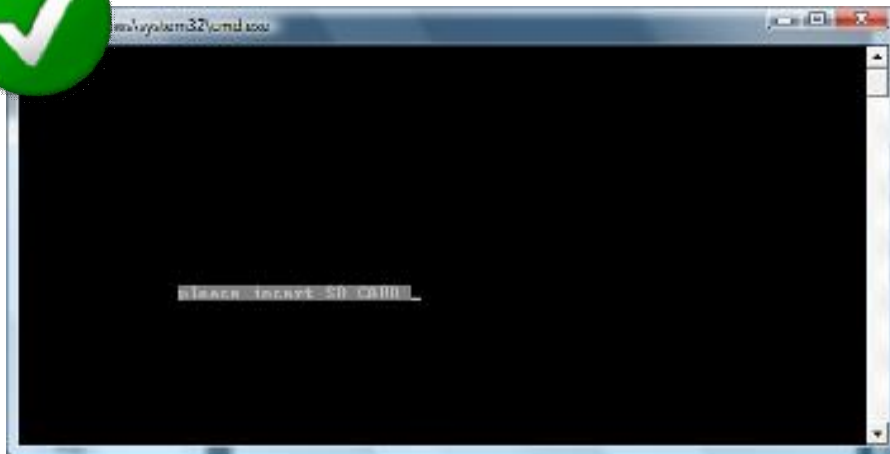
8



MS/SD Test



Insert the MS/SD card into Card Reader.

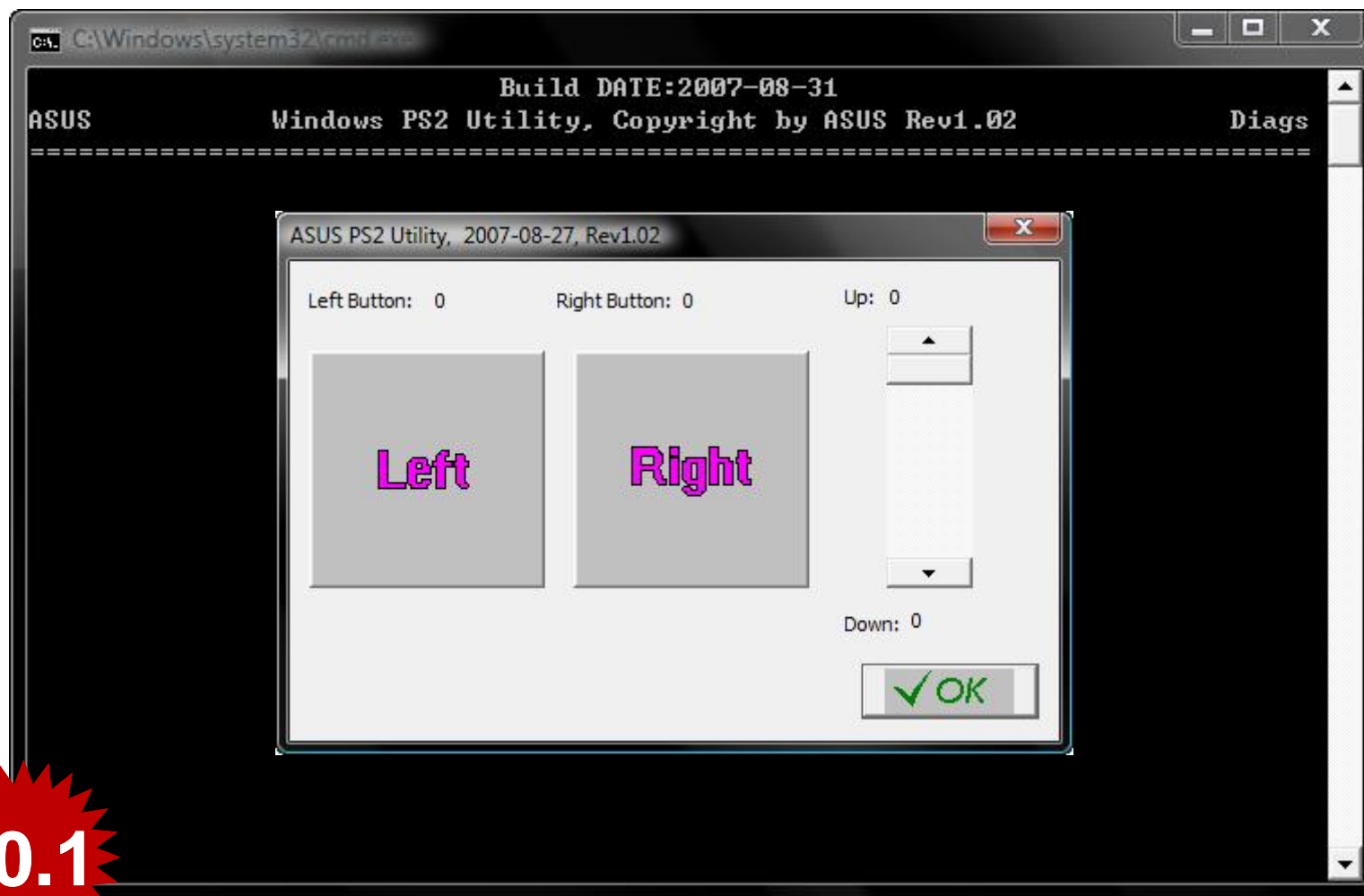


Test fail will show this picture.





TOUCHPAD Test



10.1



TOUCHPAD Test

```
C:\Windows\system32\cmd.exe

PASS=1    FAIL or Retry=3

Please Enter Your Choice :
```

10.2



VCD PLAY Test



11.1





WEBCAM Test



12



NEWCARD Test



If the NEWCARD is normal, it will appear the below pictures.

```
Build DATE:2006-10-13
Asus Network Utility. Copyright by ASUS Real.MJ
Q2: Description = Marvell Yukon 88E8053 PCI-E Gigabit Ethernet Controller
ServiceName = C:\WINDOWS\OCNLD 4666 8653 13.00.05.640043
LANSpeed = 100 Mbps
NIC Address = 88-12-BE-62-4D-08
Connect = Connected
Return_Code=41
```



TEST fail will show this PIC.

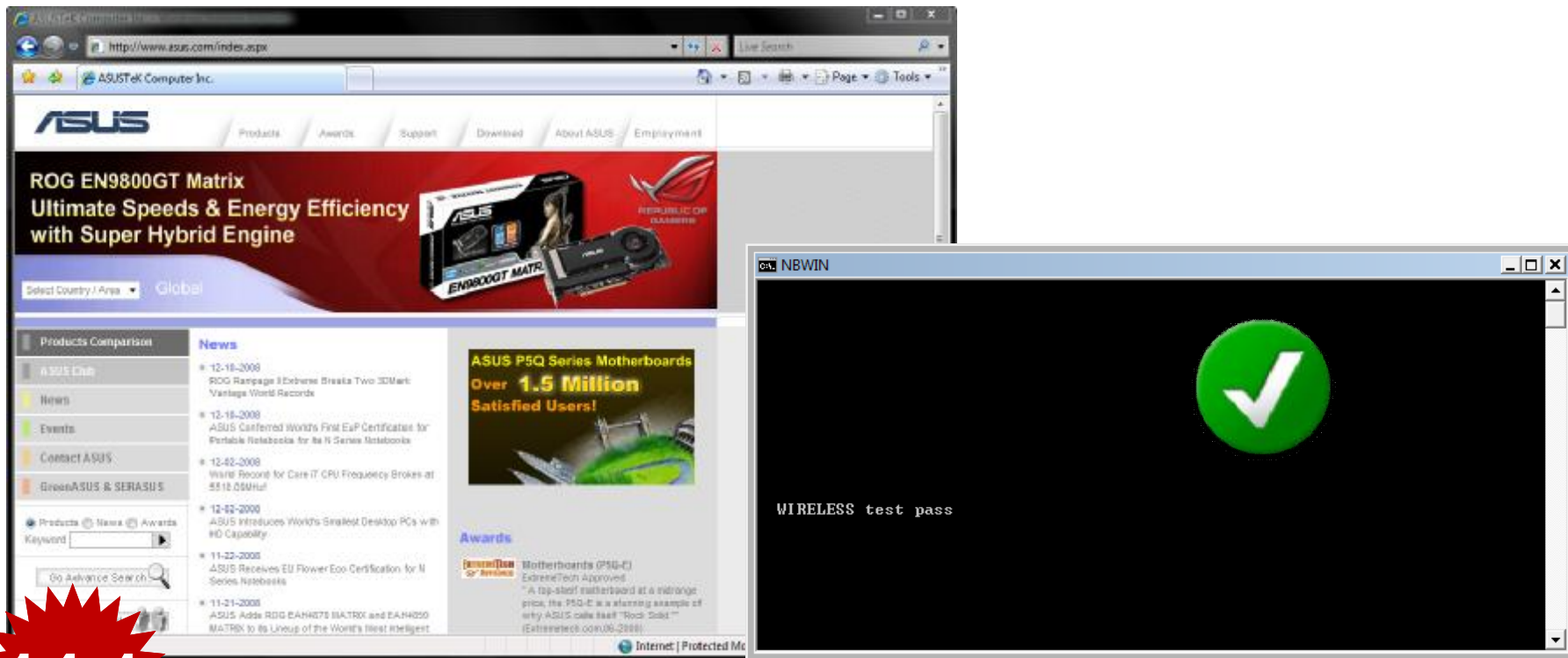


13



WIRELESS Test

p If the wireless is normal, it will appear the below pictures.



14.1

